3+ Administrator Guide for Macintosh®

3283-02

3+Plus®

3Com®

3+ Administrator Guide
for Macintosh

A member of the 3+ family of products.

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Preface

This guide is designed as a reference tool for the network administrator. Before using this guide, you should be familiar with using 3+ for Macintosh. See the *3+Share for Macintosh User Guide* for information.

For this version of 3+ for Macintosh, you need to install the 3+ software from a PC. After the network software is installed, you can administer the network from a Macintosh netstation. For information on installing 3+ software, see the *3+ 3Server3 and 3Server386 Quick Installation Guide* and the *3+ Installation and Setup Guide.*

NOTE: Whenever the term "netstation" is used in this guide, it refers to a personal computer connected to the network. The term "PC netstation" refers to an IBM Personal Computer or PS/2™, a 3Com 3Station®, or a compatible computer.

Procedures in this guide are organized to accommodate both new and experienced 3+ users. Required actions in each procedure are presented in **bold type.** Additional information about each action, when necessary, is printed below the bold type. If you are not familiar with the procedure, read all the information about each step. If you are an experienced user, simply follow the **bold type** actions.

Chapter 1: Introducing the 3+ Network

This chapter presents information about the 3+® network that you need to know in your role as network administrator. Even if you are an experienced 3+ user, you may wish to review the information in this chapter before proceeding with administrative tasks for your network.

Complete details on each of the 3+ services can be found in other chapters of this book and in the *3+Share for Macintosh User Guide*.

What Is a Network?

A **network** is a group of netstations, cabled together and connected with network hardware and software. Network hardware allows the connection of devices including printers, modems, and disk drives. Through the network software, users can share data and applications. The network consists of five basic components:

- Macintosh® or PC netstations
- A network server, such as a 3Server®, 3Server3®, or 3Server386® system
- 3+ network software
- Peripheral devices such as printers
- Network cabling such as LocalTalk™ or Ethernet

Macintosh computers can be connected to the 3+ server via LocalTalk, PhoneNET®, or Ethernet cabling. Figure 1-1 illustrates a 3Com® network using LocalTalk for Macintosh netstations. As network administrator, you can set up and install your entire network, or you can manage a network that is set up for you. The 3+ for Macintosh administrator program, called 3+NetAccess, allows you to manage your network easily and efficiently.

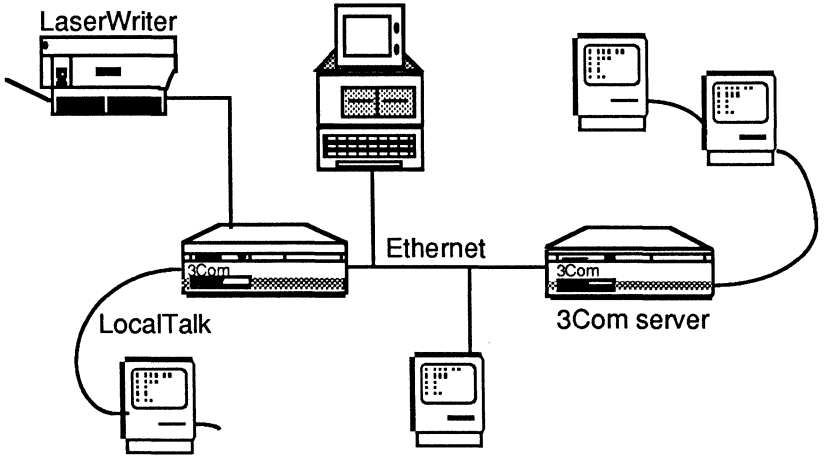


Figure 1-1. Example of a 3+ Network

Who Uses 3+?

Your 3+ network supports a variety of users. As network administrator, you create the login name and assign a capability class for each of the users. A capability class determines the kinds of functions available to a user. Table 1-1 shows the types of users and functions on the network.

Table 1-1. Types of Users

Type of User	Network Functions
General User	Share disk space, files, printers, and applications. Log in using name assigned by network administrator.
Network Administrator	Set up the network and manage network resources. Log in using Admin or name of user assigned administrative capabilities.
Server-User	Perform functions relating to devices attached to, or services installed on, a specific server. Log in using name of server.

General Users

Most users on the network are general users. General users can share disk space, files, printers, and applications on the network. These users are assigned the capability class **User.** You can find details of the functions available to general users in the *3+Share for Macintosh User Guide.*

Network Administrators

On most networks, only one user is assigned the task of network administrator and the capability class **Admin.**

In addition to general user functions, the network administrator sets up the network and manages the new resources. Any user can open the 3+NetAccess application, but only users assigned the capability class Admin can perform the administrative functions within the application.

When the 3+ software is first installed, a user called Admin is automatically created and assigned Admin capabilities. As network administrator, you log in as Admin the first time you use the network. You can then create additional users and set up each service as required.

Server-Users

Some network management tasks, such as naming and sharing printers, are done by logging into the network using the name of the server. This is called logging in as the **server-user.** When you log in as the server-user, you can perform only functions affecting devices physically attached to, or services actually installed on, that server. In contrast, logging in as Admin allows you to perform functions affecting users and servers across all servers on the network.

What Are the 3+ Services?

The power behind your network lies in the various 3+ services installed. Each service (such as Share, Backup, Mail, and NetConnect) does a specific job for the network users. Table 1-2 shows each of the 3+ services available to Macintosh users. Administering the network using these services is described in the following chapters.

Table 1-2. The 3+ Services

3+ Service	Function
3+Share® Name	Database storing names of, and information about, various parts of the network. Can be installed only on one network server.
3+Share File and Print	Includes File and Print services. Manages all information on a server, including Shared Folders and shared printers.
3+Share for Macintosh	Adds support for Macintosh netstations to servers with 3+Share File and Print already installed.
3+Mail®	Optional service that allows quick and easy communication between users on both PC and Macintosh netstations.
3+Route®	Optional service providing transparent access to information and resources on remote 3+ networks through telephone or direct cable connections.
3+NetConnect™	Optional service providing transparent access to information and resources on various types of 3+ networks (LocalTalk, Ethernet, or Token Ring) through direct cable connections.
3+Backup®	Optional service used with a 3Com Tape Backup Unit to allow a complete backup of all information on any server on the 3+ network. Backups can be scheduled to occur automatically while the network is operational.

3+Share Name Service

The 3+Share Name service is a database on the server that stores the names of, and information about, the various parts of the network. Table 1-3 shows the parts of the network, called **network objects,** and their corresponding icons that are named in the Name service. Managing the Name service involves adding, deleting, and modifying these network objects. See Chapter 3: "3+Share Name Service" for more information.

NOTE: Each network can have only one server with the Name service installed.

Table 1-3. Objects Named in the Name Service

Icon	Object	Example
	Organization	3Com Fisher Assoc
	Domain	HQ NY
	User	Doug Chase Debbie Emerson
	Server	Finance Marketing
	Alias	DougC DebbieE
	Group	Managers Supervisors
	Member	Doug Chase Debbie Emerson

3+Mail Service

The 3+Mail service enables communication between users on the network. Users can send mail to any user, alias, or group established on the Name server. For users who are established in the Name service of another network, mail can be sent to a remote network via 3+Route or to a directly connected network via 3+NetConnect.

3+Mail consists of four parts: 3+Mail user, 3+Mail Minder desk accessory, 3+Mail server, and 3+Mail administrator.

- The 3+Mail user software enables a user to send mail messages to and receive them from other users.
- The 3+Mail Minder desk accessory automatically notifies a user of any pending mail.
- The 3+Mail server software enables a server to act as a store-and-forward vehicle for all mail messages. It functions in much the same way as the post office.
- The 3+Mail administrator functions allow you to manage the Mail service using the 3+NetAccess application.

3+Route Service

The 3+Route service provides communication links to other 3+ networks via dial-up connections, using modems over telephone lines.

3+Route allows you to access files and printers shared on remote 3+ networks. All you need to know is the user or server name, including domain and organization. Accessing the remote network's resources is done through the 3+ Network Window, just as if the resources were on your local network.

All 3+ network services use 3+Route to communicate with their counterparts on other networks. To use resources or to communicate with users on another network, the particular service needs to know if the specified resource or user is on another network, and, if so, on which network. This information is maintained by the Name service.

3+Backup Service

The 3+Backup service is used with a 3Com Tape Backup Unit to allow a complete backup of all information on any 3Com server on the 3+ network. Backups can be scheduled to occur automatically while the network is operational, or they can be initiated manually.

3+NetConnect Service

The 3+NetConnect service provides a high-speed connection between LocalTalk and Ethernet or Token Ring networks. For example, if you are using 3+ on a network that has PCs connected with Ethernet, as well as Macintosh netstations connected with LocalTalk, you use 3+NetConnect to provide a communications gateway between LocalTalk and Ethernet. 3+NetConnect is required when netstations are connected to the server with LocalTalk, even if there are no netstations using Ethernet.

Accessing the other network is transparent to the user. Figure 1-2 is an example of 3+NetConnect at work.

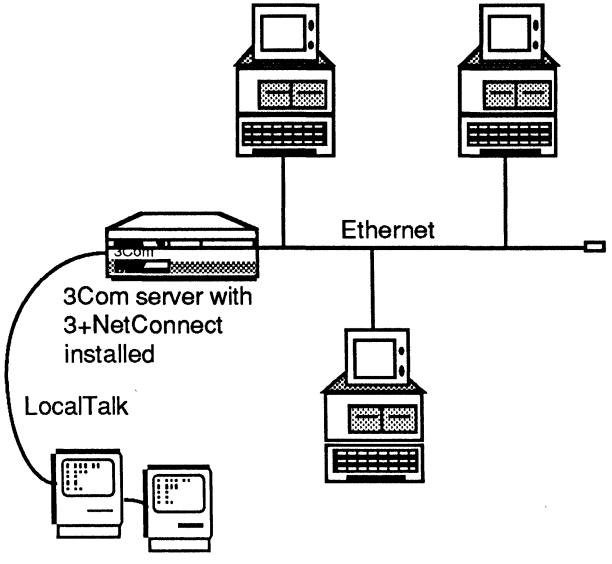


Figure 1-2. A 3+NetConnect Configuration

Chapter 2: General Administration Issues

With your 3+NetAccess application, you can organize the network to run smoothly and efficiently. Some network administration tasks involve using a combination of services. Other tasks are separate from any specific service, and some can affect multiple services. This chapter provides information on these types of administrative tasks.

Instructions for administrative tasks for the 3+Share Name service are described in Chapter 3, and instructions for the 3+Share Print service are described in Chapter 4.

Organizing Network Administration

You can organize your network's administration by first determining who will manage what. Three general approaches follow.

No Formal Administration

On very small networks, users can usually manage themselves without a formal network administration structure. When the entire network is in a single room and consists of fewer than 10 netstations, self-administration can work well. Larger networks, however, often require some structured form of administration to operate smoothly.

Centralized Network Administration

Centralized administration means a single individual or group is responsible for managing the entire network. Users request and coordinate all network administration functions through this single individual or group. This form of administration provides the most control over the network.

Distributed Network Administration

In a large network with multiple servers, distributed administration is appropriate. Each department has its own network administrator who is responsible for managing the servers and services in that department. Managing the 3+Share Name service requires some central coordination since there is only one Name service for the entire network.

Most networks combine distributed and centralized administration to some degree. Some administrative functions are centrally controlled, some are distributed. The mix appropriate to your organization is partially a function of how you have distributed the servers, tape backup units, and printers, and partially a function of your organization's management style.

Logging into the Network

Before you can use 3+ for Macintosh, you log into the network. As explained in Chapter 1, there are three types of users: general users, administrative users, and server-users. Procedures in this guide require that you log in as an administrative user or as a server-user. Each procedure specifies which capability is required.

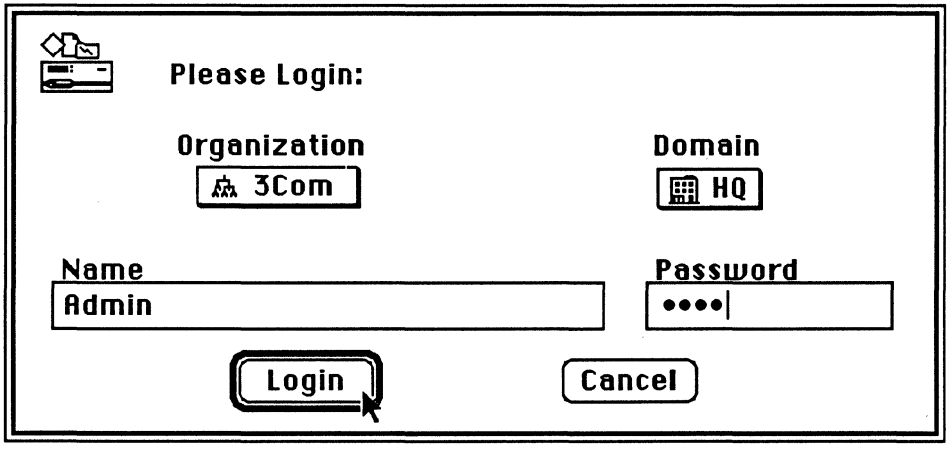
Logging In as Admin

Most procedures in this guide require that you log in as an administrative user, called Admin.

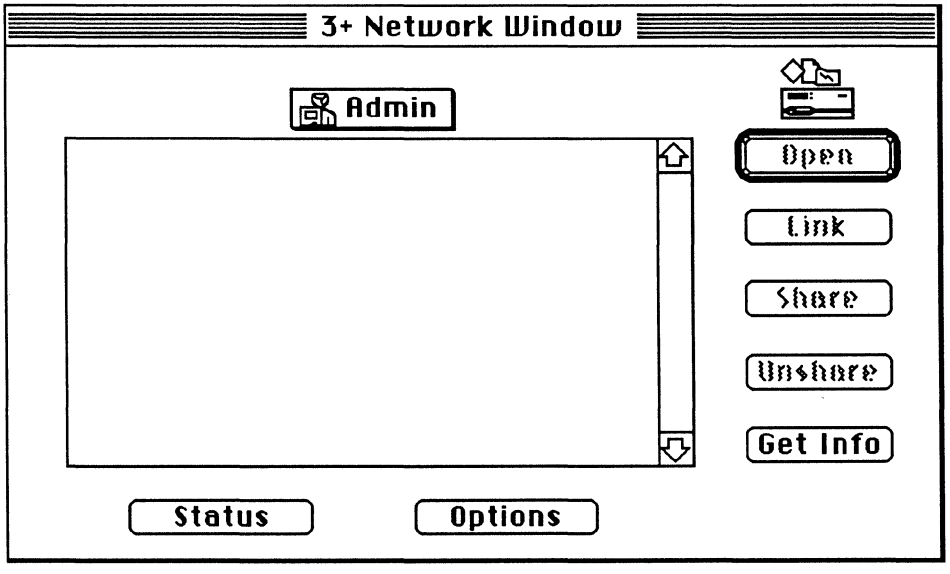
1. **Open the 3+NetAccess application.**

   If you are not logged in, the login dialog box will be displayed. Type Admin in the Name text box, enter the correct password if one exists, and click Login.

   NOTE: If your netstation is connected to the server with LocalTalk *and* you need to use an AppleTalk® zone other than the default zone, you must log in using the Chooser. Zone information is not available when logging in using the 3+NetAccess application. See "Working with Zones" in Chapter 5 of the *3+Share for Macintosh User Guide.*



The 3+ Network Window is displayed.



Logging In as a Server-User

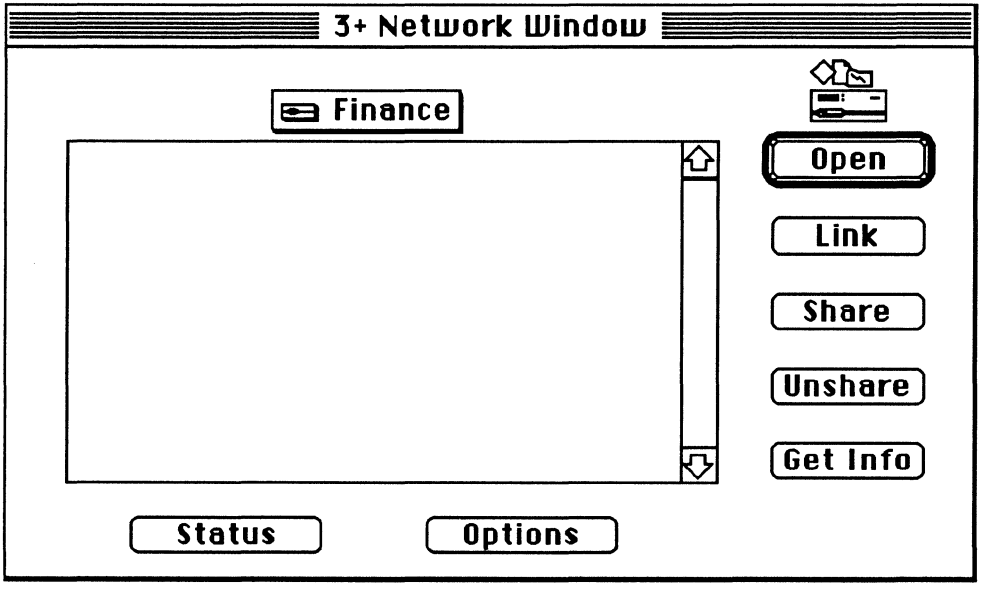
Some functions, including many printer administration functions, are performed as a server-user. When you log in as a server-user, you log in using the name of the server. The server-user can perform only functions affecting devices physically attached to, or services actually installed on, that server. A server-user does not have a user entry in the Name text service and therefore is not assigned a capability class as are general users and administrators.

1. **Open the 3+NetAccess application.**

   If you are not logged in, the login dialog box appears. Type the server's name in the Name text box, enter the correct password if one exists, and click Login.

   NOTE: If your netstation is connected to the server with LocalTalk *and* you need to use an AppleTalk zone other than the default zone, you must log in using the Chooser.

The 3+ Network Window is displayed.



Confirming Changes

When you make changes using the 3+NetAccess application's Admin menu, a confirmation dialog box allows you to verify that the changes you are making are correct. You can choose not to see this confirmation dialog box by using the Confirm Changes command in the Admin menu. When a check mark appears next to the Confirm Changes menu item, the confirmation dialog box will be displayed when you make changes. When no check mark is displayed, the confirmation dialog box will not be displayed.

All the procedures in this guide assume that Confirm Change (the default configuration of the 3+NetAccess application) is on.

Copying Items in the 3+ Network Window

You can use the standard Macintosh Copy and Paste commands to copy a user, group, or alias name in the 3+ Network Window. This can be useful when adding multiple network items to the same domain:organization.

1. **In the 3+ Network Window, find and select the user, group, or alias name you want to copy.**

   For this procedure, you can access the 3+ Network Window through the Chooser or through the 3+NetAccess application.

2. **Press Command-C to copy the selected object.**

   Alternatively, choose Copy from the Edit menu if you are using 3+NetAccess.

3. **Close the 3+ Network Window using one of the following methods:**

   - **Click Done in the 3+ Network Window and close the Chooser.**

     You can leave the Chooser open if you are using MultiFinder™.

   - **Choose Quit from the 3+NetAccess File menu.**

     You can leave the 3+NetAccess application open if you are using MultiFinder.

4. **Open an application or start a function within 3+NetAccess.**

   Open any application, such as 3+Mail, or start a function within 3+NetAccess, such as adding a user.

5. **Position the cursor where you want to paste the name you copied.**

6. **Press Command-V or choose Paste from the Edit menu.**

   The user, group, or alias name you selected in the 3+ Network Window is copied into the new location. All three parts, name:domain:organization, of the selected name are copied.

3+Share File Service

The 3+Share File service manages the file system, including Shared Folders. Through the File service, you can assign access rights and names to Shared Folders so others can use the information. Managing the File service involves assigning each user a Home Folder and monitoring the use of disk space on the server.

How Are Home Folders Assigned?

When you add a user to the Name Service, you specify the location and name of the user's Home Folder. The Home Folder is where each network user stores information on the server.

The location specified for each user's Home Folder is one of the logical disk drives (or partitions) on the server. As you add users, it is important to keep track of the space available on these drives. Each Home Folder automatically expands as the user creates files and folders. If all users were assigned Home Folders on the same partition of the server, that partition would soon run out of available space.

The 3+ network software automatically protects Home Folders by assigning them private access rights. This means that only the owner can access the Home Folder.

What Are Shared Folders?

Once logged in and linked to the Home Folder, a user can create new files and folders just as if the Home Folder were a diskette in the Macintosh's internal or external disk drive or a local hard disk. When you share a folder, you assign it a name and access rights. Once shared, the folder is referred to as a Shared Folder, and the files in it can be accessed by other users. Unless a folder is shared in this manner, no other users on the network can access any of the information it contains.

When you share a folder, you give other users specific access rights to that folder and the files it contains.

You can share a folder more than once, assigning that folder a different name, access rights, and password each time. By assigning different Shared Folder names, you can give different groups of users different access to the same group of files and folders.

For example, you can create a folder called DOCS, giving it Read Only permission. Network users who link to this folder can only read the documents in this folder. For further protection against unwanted access to files, you can assign passwords to Shared Folders.

When Should Folder Passwords Be Used?

You can assign passwords to control access to Shared Folders. If you assign a password to a Shared Folder, other users must specify that password before they can link to that Shared Folder. Use passwords when you want to control access to information in Shared Folders.

If your Shared Folder name has Private access rights and a password, other users can access it, one at a time, by supplying the password. If it has Private access rights and no password, no user can access it unless the user logs into the network with your user name.

When you assign a password to your user name, you prevent other users from logging in using your name.

What Are Access Rights?

Access rights give you a way to protect information on the network. They ensure that information is available only to you or to users you designate. You assign access rights to a Shared Folder name to control how that Shared Folder can be accessed. Table 2-1 shows the access rights you can give to a Shared Folder name and what they mean.

CAUTION: Shared Folders with Write or Create access rights should not be used to store single-user applications such as MacWrite version 4.5 or earlier. If multiple users link to such a Shared Folder and attempt to access a single-user application, damage can occur to the folder and its contents. Single-user applications should always be placed in Shared Folders with Private or Read Only access rights. Applications designed to be used by multiple users can be placed in Shared Folders with Write or Create access rights without causing problems.

Table 2-1. What Access Rights Mean

Access Right	Used By	Used For	Comments
Private	One user at a time	Home Folder or sharing folders with one other user.	If Shared Folder has no password, only you have access. All Shared Folders are Private by default.
Read Only	Users can read or copy. Only creator can modify or create new files or folders.	Sharing data, graphics, forms, bulletins.	Safest and most-commonly used access right. Add password to limit access.
Read/Write/ Create	Users can read or copy, modify, create, and delete files and folders.	Multiuser applications. Teamwork on a project.	Users can see and change all files and folders. Add password to limit access.*
Sharable	Users can create new Shared Folder names for the folder as well as read, write to, create, and delete files and folders.	Resharing folders. Teamwork on a project.	Add passwords to reshared folders and/or original Shared Folder to limit access.*
Read/Write	Users can read or copy and modify files; no one can create or delete files.	Schedules or lists that need occasional updating.	Not good for sharing applications that are not intended for network use. Not designed for use on a Macintosh.
Write/Create	Users can modify, create, or delete files, but no one can read or copy files.	Adding files to a collection. A drop box for ideas or complaints.	Users must remember that files added to the Shared Folder cannot be seen. (PC users can see the files but cannot access them.)*
Write Only	Users can write to the folder, but no one can read or copy it.	Limited usefulness. Audit trails.	Users must remember what they have written to in the Shared Folder. Not designed for use on a Macintosh.

*** See CAUTION before table.**

When a general user creates a Shared Folder, the default access rights are Private. When a server-user creates a Shared Folder, the default access rights are Read/ Write/Create.

When sharing a folder containing a multiuser application or one specifically designed for networks, make sure the access rights you specify cover the needs of the application. See the application's documentation for this information.

Sharing a Folder as Server-User

By logging into the network as a server-user, you can create and share folders in one step. These Shared Folders can be accessed by all network users by selecting the server's name in the 3+ Network Window and clicking Open.

The MACAPPS folder is a Shared Folder created by the server-user. It serves as a central location for applications and information that can be shared by all network users. Creating a MACAPPS folder is *not* required.

NOTE: If both PC and Macintosh netstations are used on the network, and you want to make applications available for both PC and Macintosh users, it is a good idea to create separate applications folders: one called APPS, for PC applications, and one called MACAPPS, for Macintosh applications. Some PC and Macintosh applications may have the same or similar names. Storing them in separate folders reduces confusion about application names.

Placing a shared application, such as 3+Mail, into a shared central area allows you to upgrade applications easily. If you allow each user to maintain a separate copy of each application, changes and upgrades can be time consuming.

NOTE: It is the responsibility of you and other network users to comply with the software license agreements for any applications placed in *any* Shared Folder.

You can create additional Shared Folders as server-user, if desired. Because they are easy to find, server-user Shared Folders are useful for storing multiuser network applications or files needed by multiple network users.

There are two tasks in creating a MACAPPS folder:

- Creating and sharing a MACAPPS folder for public use. The Shared Folder name assigned during this process provides all users with Read Only access rights to the folder.
- Sharing the same MACAPPS folder for administrative use by assigning a second Shared Folder name. The second Shared Folder name assigned during this process provides you, as the administrator, with Read/Write/Create access rights to the folder.

Creating and Sharing the Public MACAPPS

Follow these steps to create a MACAPPS folder and assign it a Shared Folder name with Read Only access rights. This is the Shared Folder name that users will link to when they want to access applications in the MACAPPS folder.

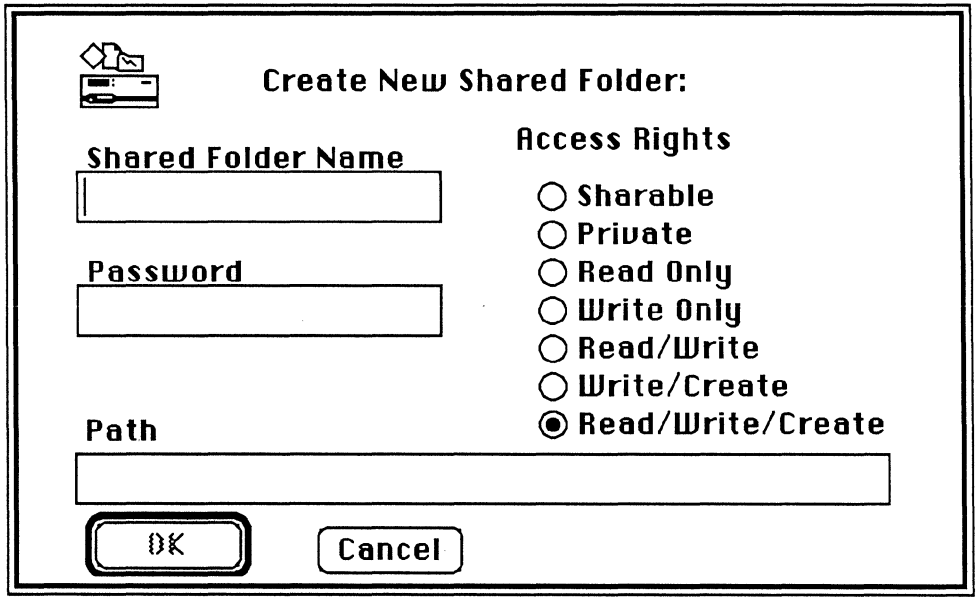
To create additional server-user Shared Folders, follow these steps substituting the desired Shared Folder name, pathname, and access rights in place of the ones suggested.

1. **Log in as the server-user for the server on which you want to create the MACAPPS folder.**

   The server you choose must have 3+Share installed. If you do not know how to log in as the server-user, see "Logging In as a Server-User" earlier in this chapter.

2. **In the 3+ Network Window, click Share.**

When you log in as a server-user, the Share button is always enabled, allowing you to create a folder and share it at the same time. The following window is displayed.



3. **In the Shared Folder Name text box, type:**

```
macapps
```

If you want to create a Shared Folder with a different name, type the desired name instead of MACAPPS.

4. **Type a password in the Password text box, if desired.**

A password is not required. If you specify a password, users will need to type the password before they can access the Shared Folder. If the Shared Folder is assigned Private access rights and has no password, it will be inaccessible to all users except the server-user.

5. **In the Path text box, type:**

```
C:\macapps
```

This is the DOS pathname indicating the location and name of the Shared Folder. If you are creating a Shared Folder with a different name, type the desired pathname.

The DOS pathname begins with the drive designation indicating the folder's exact location on the server's disk and specifies the folder's name. For example, C:\3PLUS indicates that the folder 3Plus™ is located on drive C: of the server's disk.

Each folder you create from a Macintosh netstation is represented by a DOS directory on the server's disk. In addition to the directories representing your folders, the 3+ software creates directories on the server's drive C: that are used to organize the system files. You can see what partitions and how much space is available on each directory by selecting the server's name in the 3+ Network Window and clicking Get Info.

The DOS directory structure is hierarchical the same way Macintosh folders are hierarchical. Figure 2-1 illustrates the DOS directory structure on drive C: of a server.

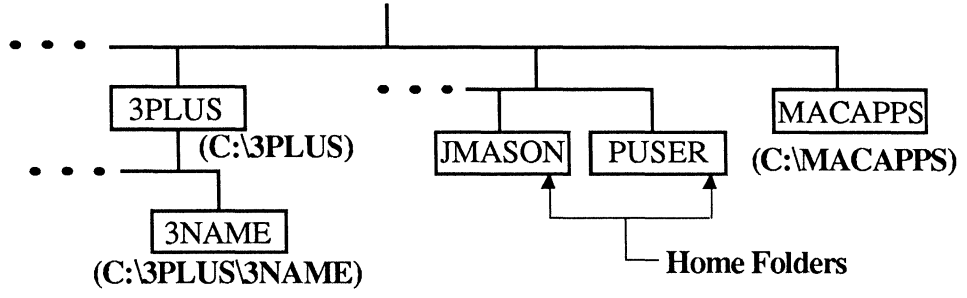


Figure 2-1. Hierarchical Directory (Folder) Structure

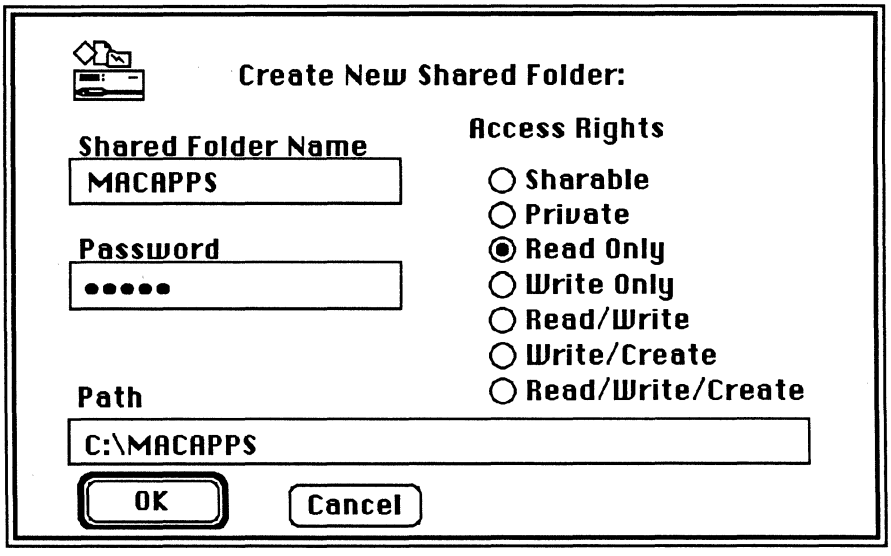
In a DOS pathname, the drive designator and the levels of the directory (or folder) hierarchy are separated by a backslash (\). Each level of the hierarchy is assigned a name from one to eight characters long with no spaces. Using this method, the path to the directory 3PLUS, shown in Figure 2-1, is C:\3PLUS. The path to the directory 3NAME is C:\3PLUS\3NAME.

As server-user, you can create and share new directories as well as share any existing directory on the server's hard disk except the root directory (C:\, D:\, etc.) of any partition.

6. **Click the Read Only access rights radio button.**

If you want to assign different access rights, click the appropriate button. Most Shared Folders created by the server-user contain shared applications and files. Read Only access rights are usually appropriate for folders containing shared applications. Users can then access information in the folder, but cannot change it. The default access rights are Read/Write/Create and are usually appropriate for folders containing shared files or applications that modify themselves. When using a multiuser network application, refer to that application's documentation for more information on the access rights you should assign to folders containing the application's data files.

If you assign Private access rights, you *must* assign a password. Folders assigned Private access rights and no password are inaccessible to all users except the server-user.



7. **Click OK to create the folder and Shared Folder name.**

   The new Shared Folder is created and shared on the network.

8. **Follow the steps below to assign a Shared Folder name for use by the network administrator.**

Sharing the MACAPPS Folder for Administrative Use

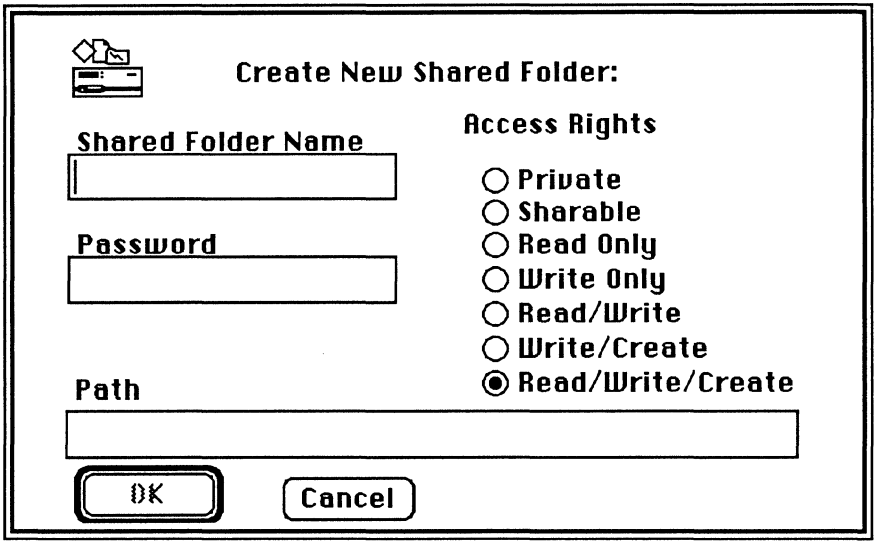
The Shared Folder name assigned to the MACAPPS folder in the previous procedure provides Read Only access rights to users. As administrator, you need to have Read/Write/Create access rights to add applications to the folder. To gain this Read/Write/Create access, you must assign an additional Shared Folder name to the MACAPPS folder.

Follow the steps below to create a second Shared Folder name for the MACAPPS folder.

1. **Make sure you are logged in as the server-user for the server on which you created the MACAPPS folder.**

2. **In the 3+ Network Window, click Share.**

   The following dialog box appears.



3. **In the Shared Folder Name text box, type:**

   ```
   macapps
   ```

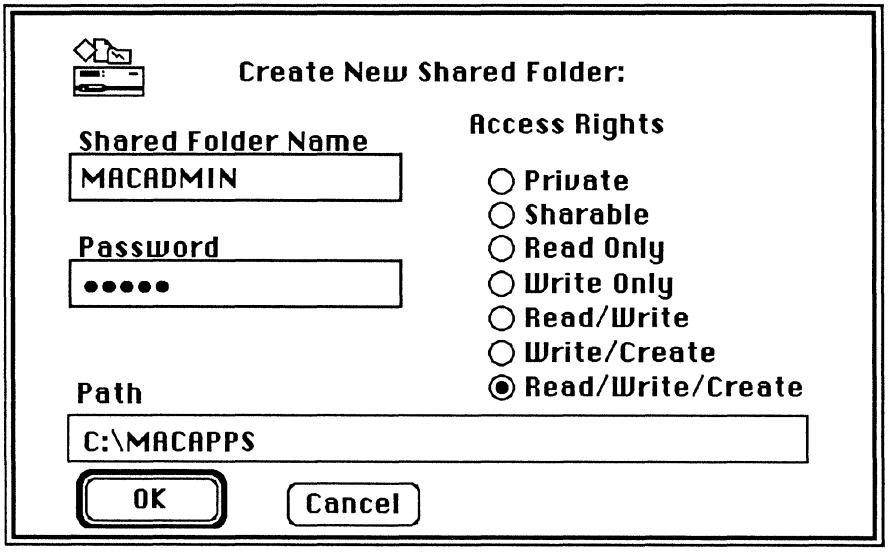
4. **Type a password in the Password text box, if desired.**

   A unique password should be assigned to this Shared Folder name to prevent unauthorized Write/Create access. When you want to link to the MACADMIN Shared Folder, you must specify the password assigned in this step.

5. **In the Path box, type:**

   ```
   C:\macapps
   ```

   This is the DOS pathname indicating the location and name of the Shared Folder. It is the *same* pathname used when you created the MACAPPS folder in the previous procedure. This allows you to assign a second Shared Folder name to the same physical folder on the server.



6. **Verify that the Read/Write/Create access rights radio button is selected.**

   The default access rights for folders shared by the server-user is Read/Write/Create. The MACADMIN folder should be assigned Read/Write/Create access rights so that you, as administrator, can access and change information in the folder.

7. **Click OK.**

   A second Shared Folder name, MACADMIN, is assigned to the MACAPPS folder on drive C: of the server's disk.

8. **Log out.**

Managing Storage Space

As network administrator you are responsible for managing the disk space for each file server on the network. To manage disk space, you need to:

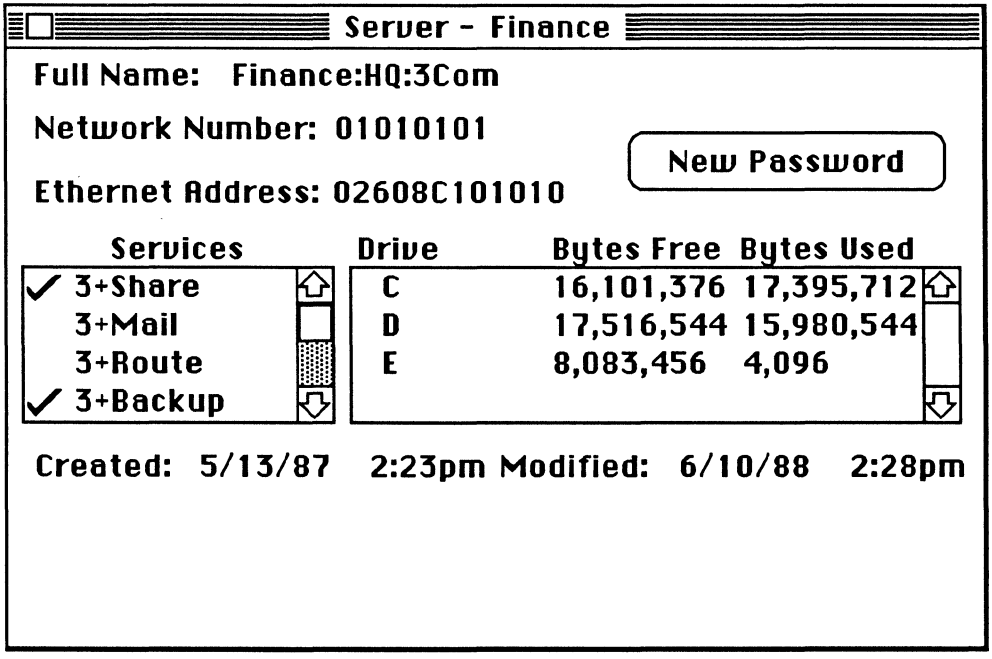
- Monitor how much space is available for each file server
- Provide more space when it is needed

Available space is the amount of storage space available on the server's disk or disks for network users to access. Too little available space can slow down the network and affect users' productivity.

As a general guideline, at least 10 percent of each partition on a server's disk should be available. This percentage can vary depending on the kinds of applications you are running. For example, an application that uses a large amount of temporary file space will need additional available space on the disk. Servers that are used for shared printers or 3+Mail require additional space on partition C: for storing files waiting to be printed or for storing mail messages waiting to be forwarded or delivered.

Checking Disk Space

You should check the amount of available disk space at least once a week to be sure that there is enough for your network. To see the status of a server's disk space, select the server name in the 3+ Network Window and click the Get Info button. The Get Info window appears, as shown below. See "Modifying a Server" in Chapter 3 for more information. The box at the bottom-right portion of the window shows information about each of the server's disk partitions.



Reclaiming Disk Space

When the amount of available disk space on a file server becomes too low to support the network efficiently, you need to provide more space. There are several ways to do this:

- Have users delete unnecessary files and/or folders.
- Delete extra copies of applications.
- Instruct users to move files and/or folders no longer in use to diskettes.
- Move users and programs to a different file server that has more available space.
- Move users and programs to a different partition if one partition is low on space.

For information on moving users to a different file server or to a different partition on the same server, see "Moving Users," next.

Moving Users

From time to time, it may be necessary to move a user or a user's Home Folder to a different location on the network. This may occur if your file server runs out of space or has less space available than you desire.

You will need to move users when:

- An expansion disk is added to the system. For this disk space to be used, you need to add new users to it and/or move some user Home Folders to it.
- Users are deleted from the network. If this occurs, you may want to move users from one partition to another so that available disk space is more evenly distributed.
- Too many users have Home Folders on one partition. In this case, you may want to move users from one server to another or from one partition to another to provide them with more available disk space.

The steps for moving users between servers or between partitions on a single server are the same.

There are three stages involved in moving a user:

- Creating a new Home Folder
- Moving information to the new Home Folder
- Assigning the new Home Folder to the user

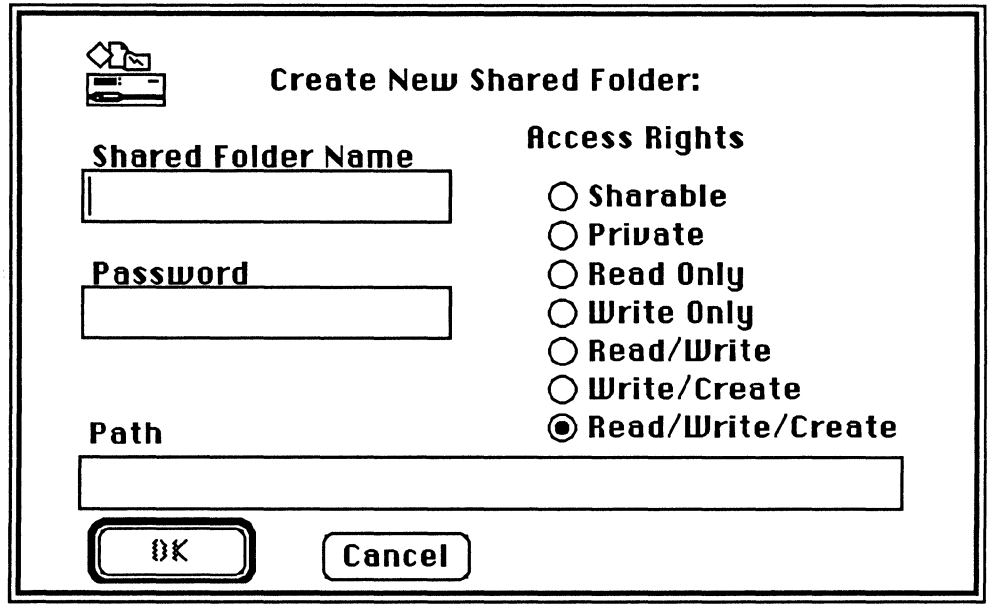
Creating a New Home Folder

1. **Log in as the server-user for the server to which you want to move the user.**

   If you do not know how to log in as the server-user, see "Logging In as a Server-User" earlier in this chapter.

2. **In the 3+ Network Window, click Share.**

   The following dialog box appears.



3. **Type a unique name for the new Shared Folder in the Shared Folder Name text box.**

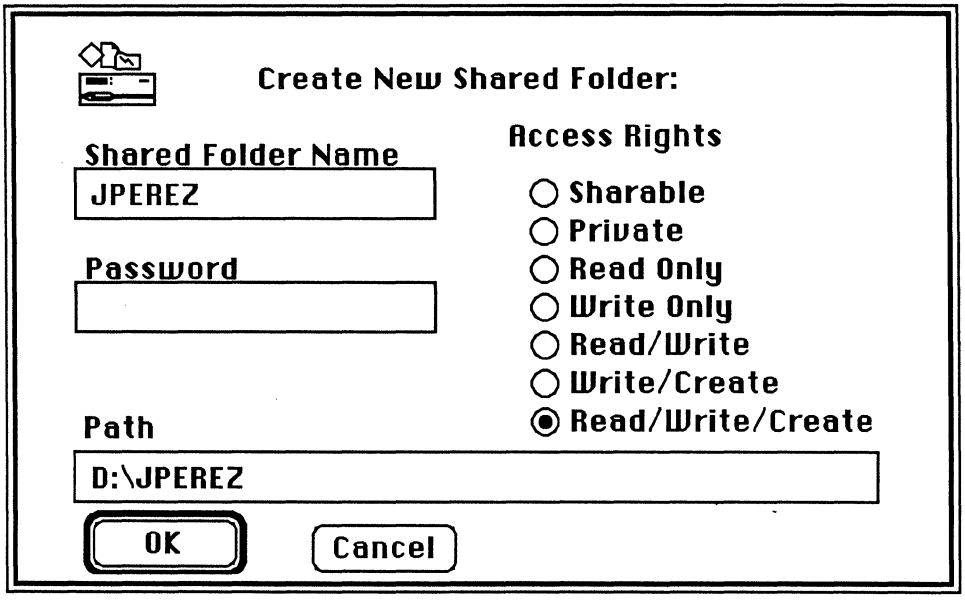
   Be sure to use a new name for the Shared Folder. This Shared Folder will become the user's Home Folder when you have completed the moving procedure. For example, if you are moving Jeff Perez's Home Folder and his current Home Folder is named JeffP, assign the name JPEREZ.

4. **Leave the Password text box blank so that no password is assigned.**

5. **In the Path text box, type the new location and name for the new Shared Folder you are creating.**

   This is the DOS pathname indicating the location and name of the new Shared Folder. For example, if Jeff's new Home Folder will be located on drive D:, type:

   ```
   D:\jperez
   ```



6. **Verify that the Read/Write/Create access rights radio button is selected.**

   The default access rights for folders shared by the server-user is Read/Write/Create. The new Shared Folder should be assigned Read/Write/Create access rights so that you, as administrator, can access it and move files and folders to it. The access rights will be changed later to provide the user with Private access.

7. **Click OK.**

   A new Shared Folder is created on the drive you specified.

8. **Log out.**

Moving Information to the New Home Folder

1. **Log in as the user you are moving.**

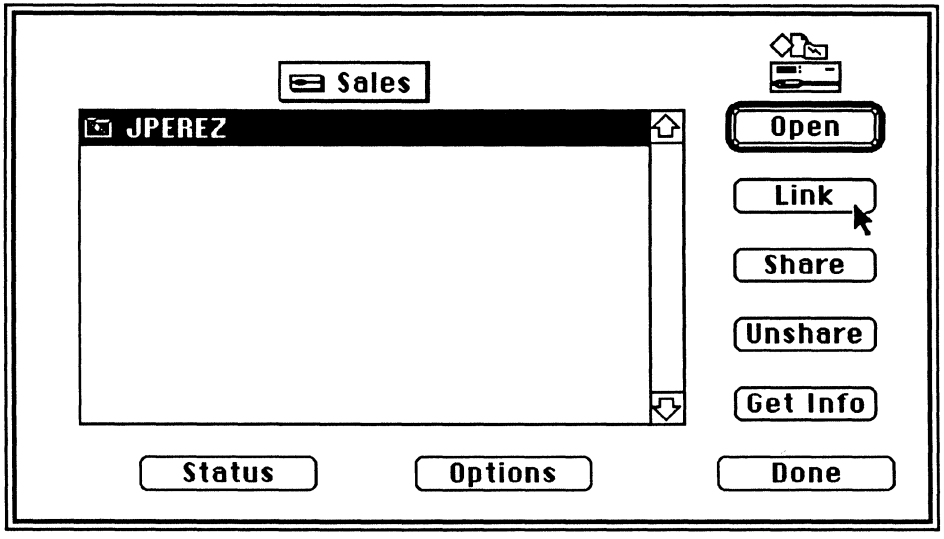
   NOTE: If the user has a password that you do not know, first log in as Admin and delete the password. The user can add a new password after the move is complete. For information on deleting a user password, see "Deleting a User Password" in Chapter 3.

2. **In the 3+ Network Window, select the user's Home Folder and click Link.**

3. **If the user has created Shared Folder names, select and unshare them.**

4. **Link to the new Shared Folder you created in the first part of the moving procedure, "Creating a New Home Folder."**

   Move through the 3+ Network Window, selecting and opening the server where the new Shared Folder was created, and then selecting and linking the new folder. If you do not know how to move through the 3+ Network Window, see Appendix C: Using the 3+ Network Window, for information.



5. **Copy all the files and folders in the user's Home Folder to the new Shared Folder.**

   From the desktop, open the user's Home Folder, select all the files and folders, and drag them to the new Shared Folder.

6. **Delete all the files and folders in the user's Home Folder.**

   From the desktop, select all the files and folders in the user's Home Folder and drag them to the Trash.

7. **Log out.**

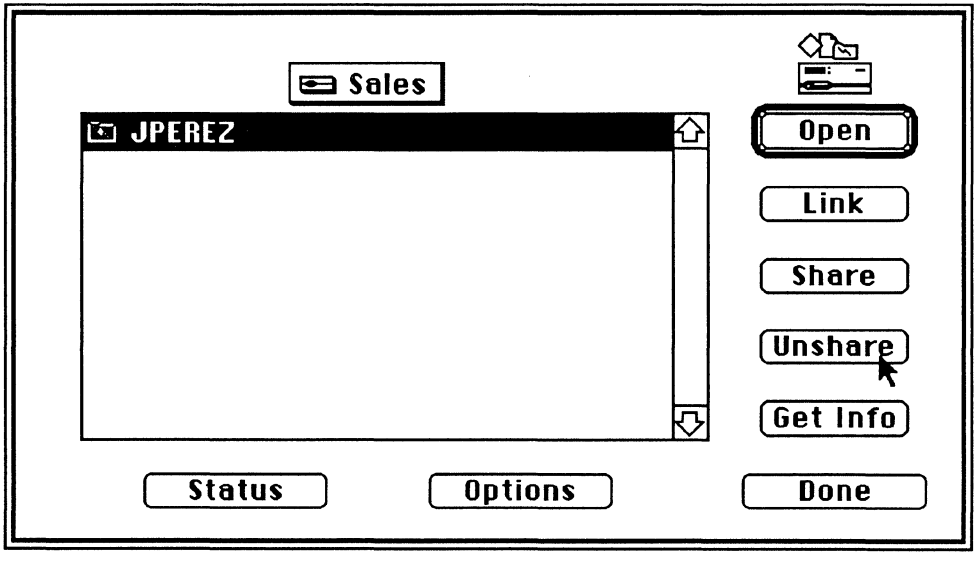
Assigning the New Home Folder to the User

1. **Log in as the server-user for the server on which you created the new Shared Folder.**

   If you do not know how to log in as the server-user, see "Logging In as a Server-User" earlier in this chapter.

2. **In the 3+ Network Window, select the new Shared Folder name and click Unshare.**

   The folder still exists on the server and contains all the files and folders that were in the user's Home Folder, but you have removed the folder's Shared Folder name.



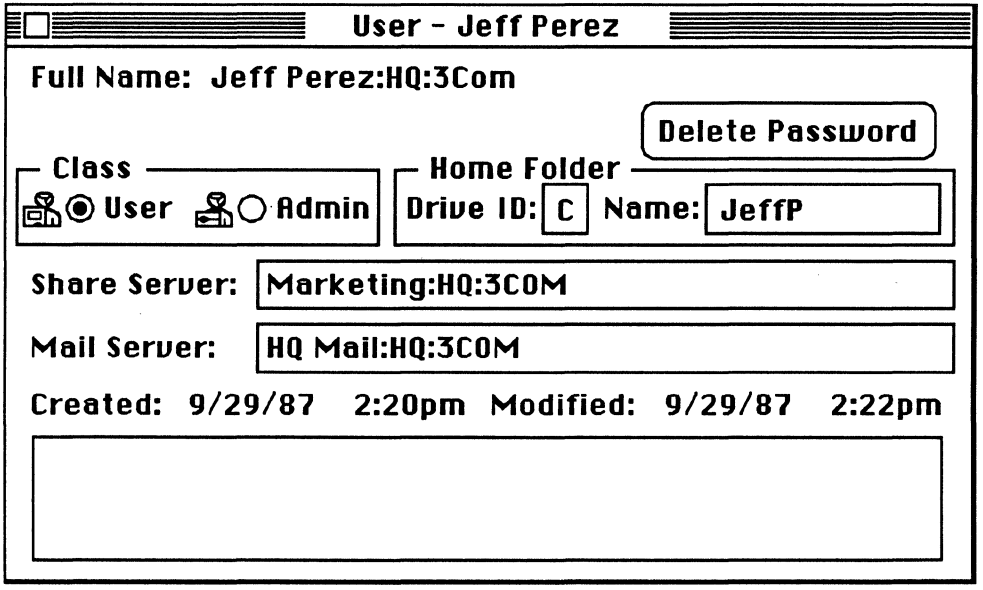
3. **Log out.**

4. **Log in as Admin and open the 3+NetAccess application.**

   If you do not know how to do this, see "Logging In as Admin" earlier in this chapter.

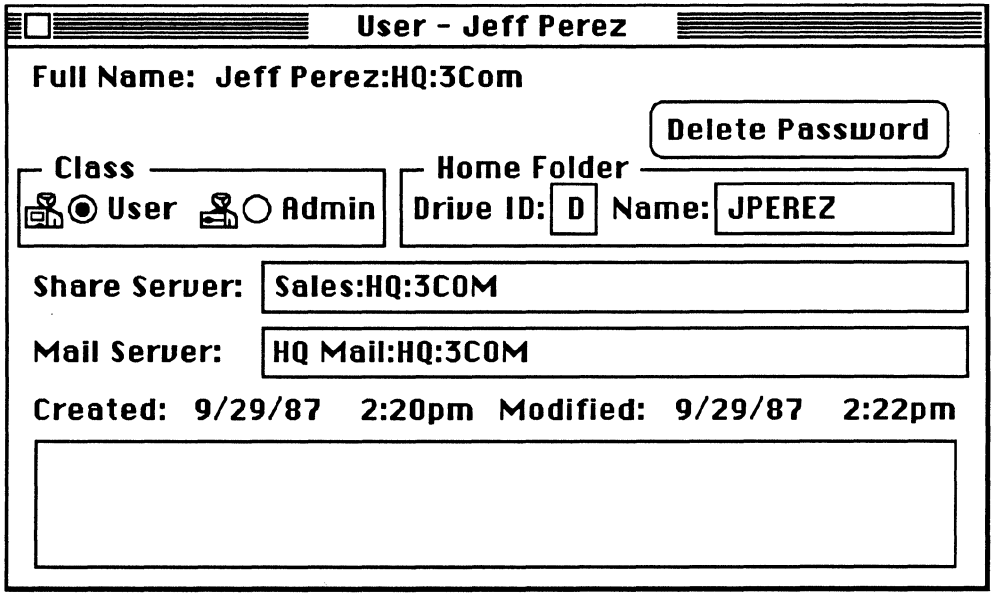
5. **Select the user you are moving and click Get Info.**

   The user Get Info window appears on the screen.



6. **Enter the new drive ID and folder name in the Home Folder box.**

7. Enter the new Share Server name (if applicable) in the Share Server text box.



8. Close the user Get Info window.

9. Click Yes to confirm the changes.

Unlinking a User

You can unlink a user or users from all shared printers and folders on a server using the 3+NetAccess application. If a Macintosh netstation is turned off before the user logs out or before the user chooses Shut Down from the Special menu, the links established by the user to shared printers and folders may not be broken. You can use this procedure to break those links. This procedure is also useful if you want to unshare a shared printer or Shared Folder to which users are linked.

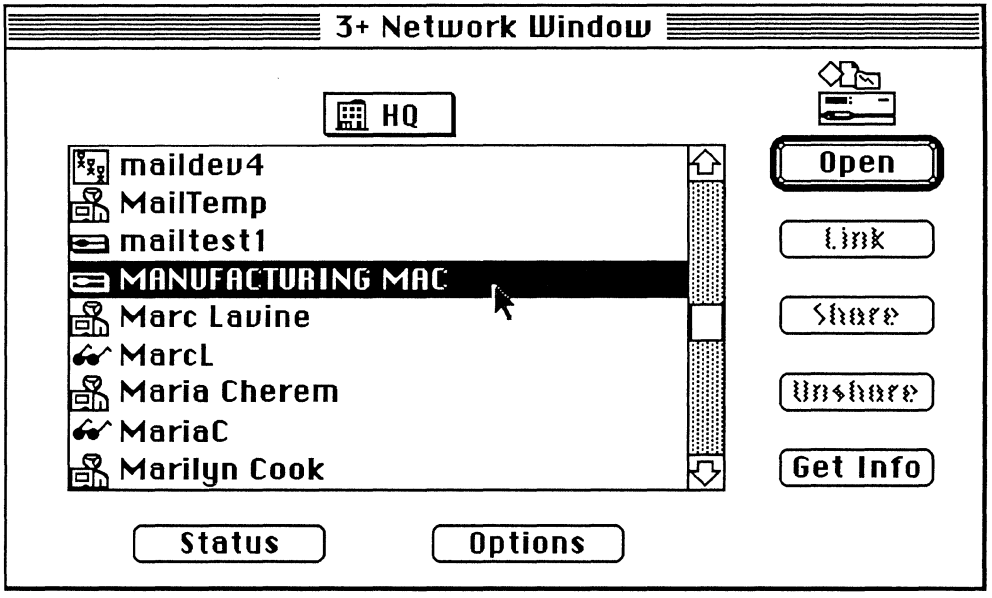
CAUTION: This procedure breaks *all* shared printer and folder links that the user has to the server. Before using this procedure, make sure the user is not accessing information or printers on the server.

1. **Log in as Admin and open the 3+NetAccess application.**

   If you do not know how to do this, see "Logging In as Admin" earlier in this chapter.

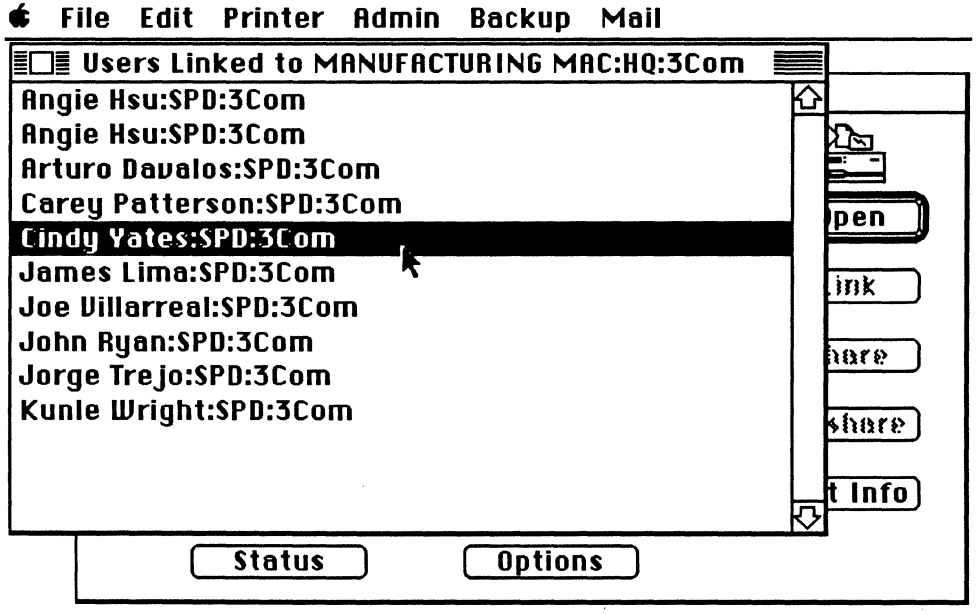
2. **Select the server from which you want to unlink a user.**

If you do not know how to do this, see Appendix C: Using the 3+ Network Window. A list of all the users, servers, and groups in that domain appears on the screen.



3. **Choose Show Links from the File menu.**

   A list of users linked to shared printers and folders on the server appears.



4. **Select the user you want to unlink.**

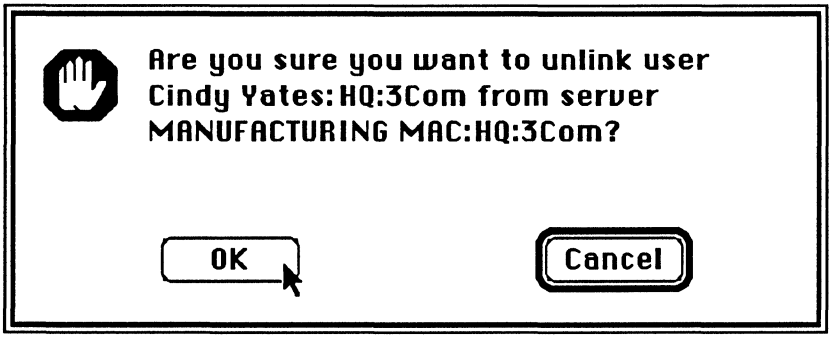
   If a user's name is listed more than once, it indicates that the user has logged into the network from multiple netstations using the same name. Follow these unlinking steps for each occurrence.

CAUTION: If you are logged in as Admin or as a user with Admin capabilities and want to unlink yourself, first log in as another user with Admin capabilities.

---

5. **Choose Unlink User from the File menu.**

A dialog box appears asking if you want to unlink the user from the server.



6. **Click OK.**

All the user's shared printer and folder links to the server are broken. To bypass unlinking the user, click Cancel.

Shutting Down the Services

You will need to shut down the services on a server if you:

- Prepare to turn off the server's power.
- Reinstall any of the network software.
- Install a new network service on the server.
- Add or reconfigure a printer.
- Add or reconfigure a modem.
- Change parameters using the 3OPT program. (See the *3+Tuning Guide* for information on the 3OPT program.)
- Prepare to remove a service.

CAUTION: Make sure no users are accessing the server and that the network software is shut down before turning off a server's power.

Follow these steps to shut down all the services on a server:

1. **Inform all users that the server will be shutting down.**

   Any users attempting to access the server after it is shut down will receive an error message.

2. **Log in as Admin and open the 3+NetAccess application.**

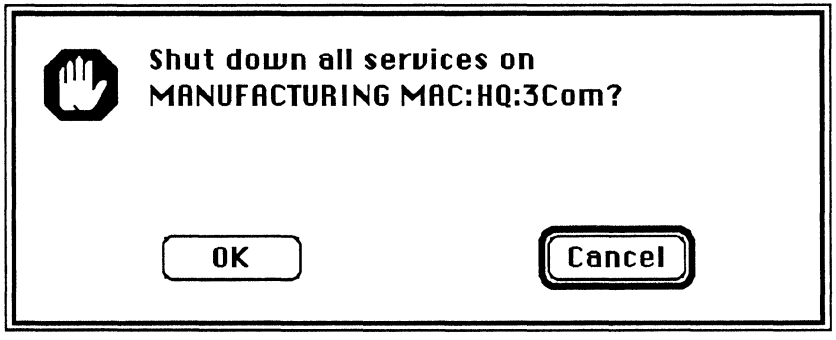
   If you do not know how to do this, see "Logging In as Admin" earlier in this chapter.

3. **Select the server that you want to shut down.**

   If you do not know how to do this, see Appendix C: Using the 3+ Network Window. A list of all the users, servers, and groups in that domain appears on the screen.

4. **Choose Shutdown Server from the Admin menu.**

   A dialog box appears asking if you want to shut down all services on the server.



5. **Click OK to shut down all services.**

   Click Cancel to bypass the shutdown process.

NOTE: To restart network operations after shutting down a server or servers, you must restart each server that was shut down. If the server on which you installed the 3+Share Name service was shut down, you must restart it first.

Chapter 3: 3+Share Name Service

The 3+Share Name service is a database that keeps track of network objects. Network objects are users, domains, organizations, servers, aliases, groups, and members on your network. Administering the Name service involves adding, deleting, and modifying these network objects. Procedures for performing these functions are presented in this chapter, complete with guidelines to follow when naming network objects.

3+Share Name Service

The 3+Share Name service is a database on the server that stores the names of the network objects. Table 3-1 shows the network objects and corresponding icons named in the Name service. Managing the Name service involves adding, deleting, and modifying these network objects. Each network can have only one server with the 3+Share Name service installed.

Table 3-1. Objects Named in the Name Service

Icon	Object	Example
	Organization	3Com Fisher Assoc
	Domain	HQ NY
	User	Doug Chase Debbie Emerson
	Server	Finance Marketing
	Alias	DougC DebbieE
	Group	Managers Supervisors
	Member	Doug Chase Debbie Emerson

What Are Three-Part Names?

Every name you add to the Name service has three parts: name, domain, and organization.

The name you give a user, or other network object, is the name by which you want it known. For example, a user name might be Doug Chase, or a server, Finance, as shown in Table 3-1. Every assigned name belongs to a domain and organization.

The **domain** represents a category within the organization. It can indicate the geographical location of part of the company or the name of a department. Domains contain multiple names. In Table 3-1, HQ is a domain containing the user names Doug Chase and Debbie Emerson and the server names Finance and Marketing. Every domain belongs to an organization.

The **organization** is the top-level category to which names on the network belong. In most cases, an organization is the name of a company. Organizations can contain multiple domains. Usually there is only one organization per network, but you can have more than one organization. In Table 3-1, Fisher Assoc is the organization containing the domains HQ and NY.

What Are Aliases?

An alias is another, usually shorter name for an object on the network. Aliases are typically used to save typing time when addressing 3+Mail messages. In Table 3-1, Doug Chase has been assigned the alias DougC. This allows him to log into the network without typing his entire name.

With 3+ network, you can manage the use of aliases as your network grows. Make sure that each alias clearly refers to the correct user name. As new users are added, you may need to delete aliases to avoid conflicts. For example, Steven Borsuk and Steven Brown cannot both use the alias StevenB. Instead, the aliases SBrown and SBorsuk could be created.

You can create aliases within your domain that point to users in other domains. You can also create a central domain containing aliases for all users, eliminating the need for everyone to remember other users' domains.

What Are Groups and Members?

A **group** is a collection of named objects. Each object in a group is a **member** of that group. Groups are typically used as distribution lists by 3+Mail. A group can contain individual user names, names of other groups, or aliases. In Table 3-1, the group Managers could include the members Doug Chase and Debbie Emerson.

Why Use Passwords?

Passwords prevent unauthorized use of the network and its resources. Users, administrators, servers, printers, and Shared Folder names can all have passwords. You assigned a password to the server while installing 3+. When you add users to the network, you have the option of assigning passwords for them. You can either assign passwords and give them to users, or let users assign their own passwords.

When a password is assigned, you must enter it to gain access to the network or network resource. If you forget to enter the password, a dialog box appears to remind you that one is required.

Naming Guidelines

Every name you add to the Name service has three parts: name, domain, and organization.

When naming network objects, the following guidelines must be followed:

- The name can be from 1 to 40 characters long.
- The domain can be from 1 to 20 characters long.
- The organization can be from 1 to 20 characters long.
- The total length of all three parts cannot exceed 56 characters.

The following characters can be used for each part:

- The letters "A" to "Z" and "a" to"z".
- The numbers "0" to "9".
- The special characters dash (-), underscore (_), period (.), single quote ('), and blank ( ).
- Most international characters, such as é, ö, ñ.

CAUTION: The Name service reserves the exclusive right to use the following names: user, server, group, alias, prop, sys, member, domain, organization, and help. *Do not use any of these names for the network objects you add,* because unexpected and undesirable results could occur.

The Name service records three-part names exactly as you enter them. It remembers any capitalization and uses it for displays (as in the 3+ Network Window) but not for comparisons. That is, the Name service overlooks capitalization when it compares two names. For example, each of the following is considered to be the same name:

```
JEFF MASON
Jeff Mason
jeff mason
```

Adding Network Users

People connected to the network are called network users. You must add all network users to the Name service. After they are added, they can log in and use the network. Follow these steps to add new users to your network.

NOTE: 3+ for Macintosh uses the same Name service as the PC netstations on your network. It is not necessary to create a new user name for existing PC netstation users who want to access the network using a Macintosh netstation.

1. **Log in as Admin and open the 3+NetAccess application.**

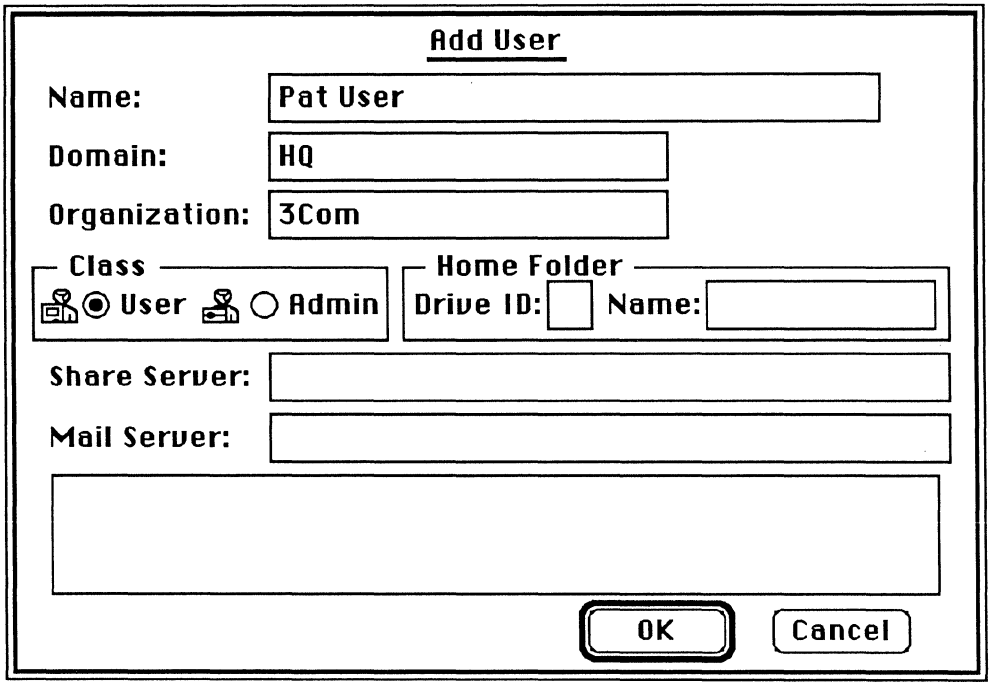
   If you do not know how to do this, see "Logging In as Admin" in Chapter 2.

2. **Choose Add User from the Admin menu.**

3. Enter the new user's name in the Name text box.

Enter the new user's first and last names. If two people have the same first and last names, you can include a middle initial.

A user name can be up to 40 characters long. The total length of all three parts (user name, domain, and organization) cannot exceed 56 characters.



4. Enter a domain in the Domain text box, if necessary.

To place this user in a domain different from the one displayed, enter the correct domain name in the Domain text box. If you want to add the user to the domain listed, skip this step.

5. **Enter an organization in the Organization text box, if necessary.**

   If the domain shown in the Domain text box is in an organization different from the one displayed, enter the correct organization name in the Organization text box.

6. **Enter the drive location for the new user's Home Folder in the Drive ID text box.**

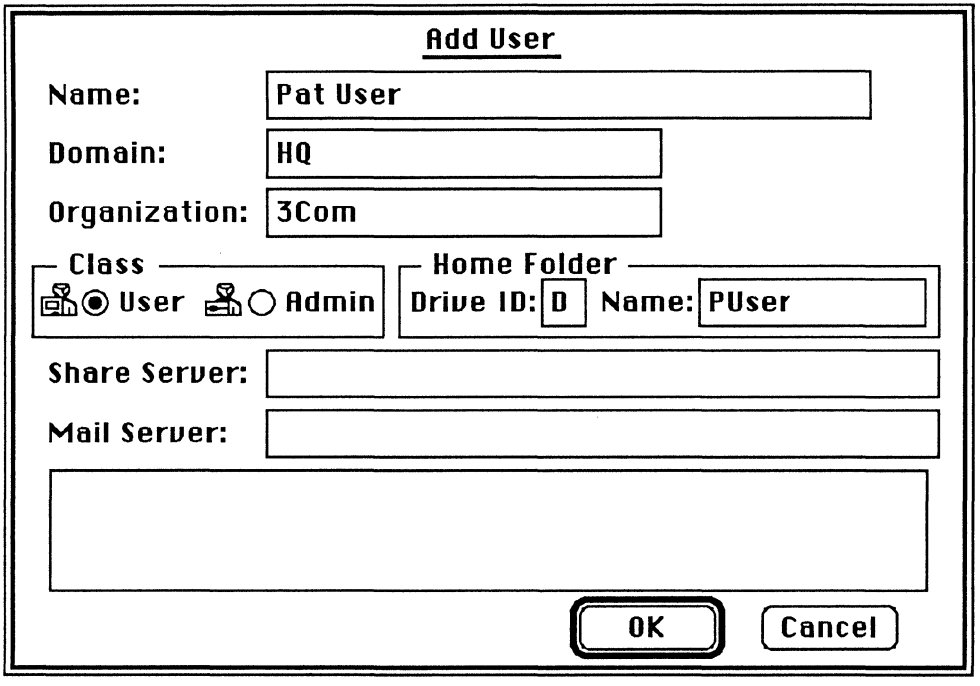
   This is the area (disk partition) on the server's disk where you want to place the user's Home Folder. Each drive on a server's disk is identified by one character, which is assigned when 3+Share is installed.

   By carefully assigning drive IDs for users' Home Folders, you can make sure the server's disk space is used efficiently. To find out which drives the server has and to check the amount of disk space available on each drive, select the server in the 3+ Network Window and click Get Info.

7. **Enter a name for the user's Home Folder in the Name text box.**

This name tells 3+Share to create an area on the server where this user can store folders and files. This name must be unique on the server and must be from one to eight characters long. To keep Home Folder names unique, consider using the first initial and first seven letters of each user's last name. For example,

This user name:	Would have this Home Folder name:
Pat User	PUser
Jeff Brown	JBrown
Jean Anderson	JAnderso



8. **Assign a capability class, if necessary.**

   The capability class is preset to User. If you want to provide a user with administrative privileges, click Admin. See Chapter 1 for descriptions of the two capability classes (User and Admin).

9. **Enter your 3+Share File and Print server's name in the Share Server text box.**

   Enter the three-part name you assigned the server when you installed the 3+Share File and Print software. Separate each part of the name with a colon (for example, Finance:HQ:3Com).

   NOTE: You can select the server's name in the 3+ Network Window and choose Copy from the Edit menu (or press Command-C) to copy it, then choose Paste from the Edit menu (or press Command-V) to paste it in the Share Server text box.

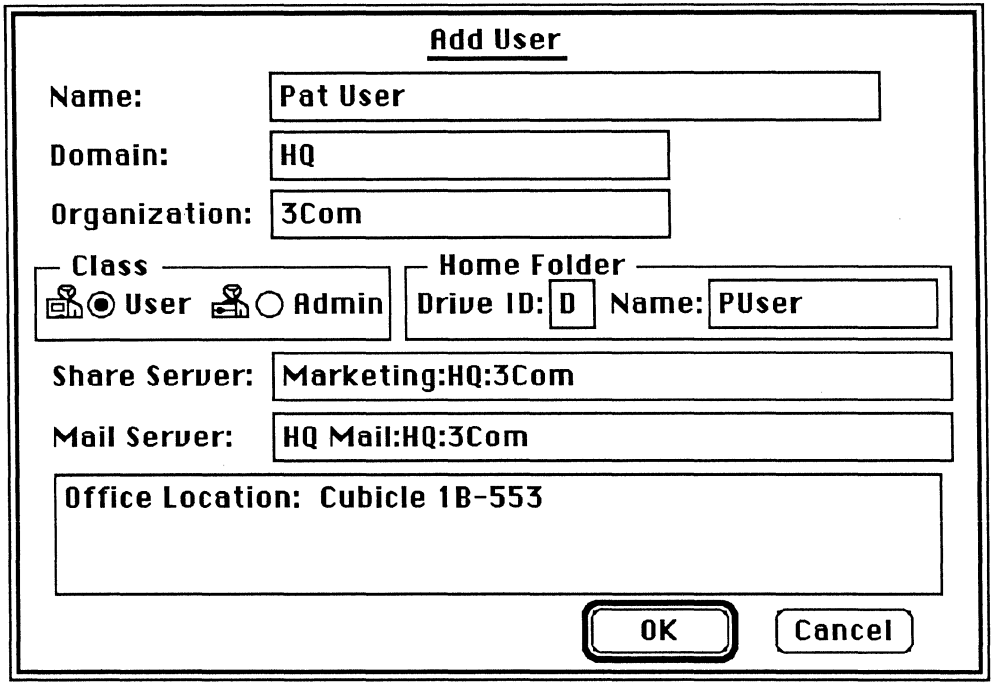
10. **If 3+Mail is installed on the network and this user will be accessing 3+Mail, enter a 3+Mail server's name in the Mail Server text box.**

    Enter the three-part name of the 3+Mail server in the text box. Separate each part of the name with a colon (for example, Mail Server:HQ:3Com).

11. **Enter notes about the user, if desired, in the box at the bottom of the Add User dialog box.**

    The empty box at the bottom of the Add User dialog box provides space (for up to 100 characters) in which you can enter notes about the user. For example, you could enter the user's job title or office location.

NOTE: Pressing Return is the same as clicking OK. Do *not* press Return unless you are ready to add the user.



12. **Click OK to add this user to the Name service.**

    To prevent the user from being added, click Cancel.

13. **Repeat these steps for each user you want to add.**

    NOTE: If you are adding several users at one time, hold down the Command key when you click OK. Instead of returning to the 3+ Network Window, the Add User dialog box is displayed, allowing you to add another user.

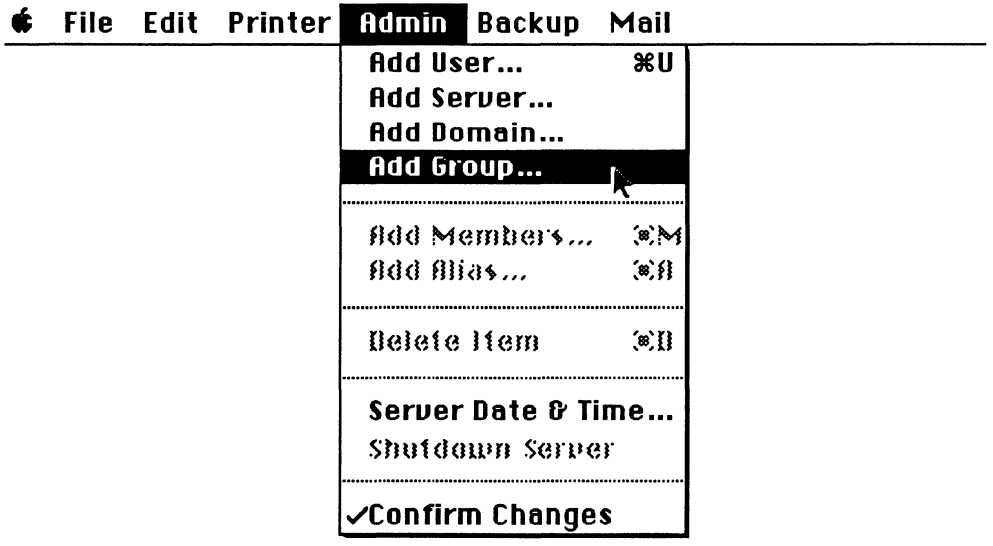
Adding Groups

You may find that you and other users regularly send messages to a certain group of people. To save time addressing such messages, you can create distribution lists, called groups. Once you add a group to the Name service, you can address a message to the group name, and the service then sends the message to everyone on the list.

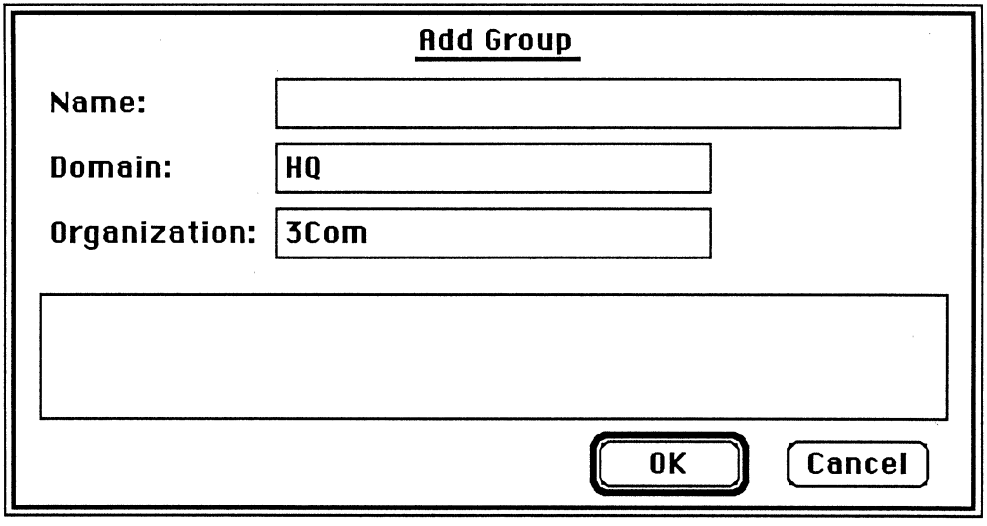
1. **Log in as Admin and open the 3+NetAccess application.**

   If you do not know how to do this, see "Logging In as Admin" in Chapter 2.

2. Choose Add Group from the Admin menu.



The Add Group dialog box displays the domain and organization that you last entered.



3. **Enter the new group name in the Name text box.**

   A group name can be up to 40 characters long. The total length of all three parts (group name, domain, and organization) cannot exceed 56 characters.

4. **Enter the group's domain in the Domain text box, if necessary.**

   To add this group to a domain different from the one displayed, enter the correct domain name in the Domain text box. If you want to add the group to the domain listed, skip this step.

5. **Enter the group's organization in the Organization text box, if necessary.**

   If the domain displayed in the Domain text box is in an organization different from the one displayed, enter the correct organization name in the Organization text box.

6. **Enter notes about the group, if desired, in the box at the bottom of the Add Group dialog box.**

   The empty box at the bottom of the Add Group dialog box provides space (for up to 100 characters) in which you can enter notes about the group. This is a good place to enter a description of who will belong to this group. For information on adding members to the group, see "Adding Members to Groups," next.

7. **Click OK to add the group to the Name service.**

   Click Cancel to bypass the addition.

8. **Repeat these steps for each group you want to add to the Name service.**

Adding Members to Groups

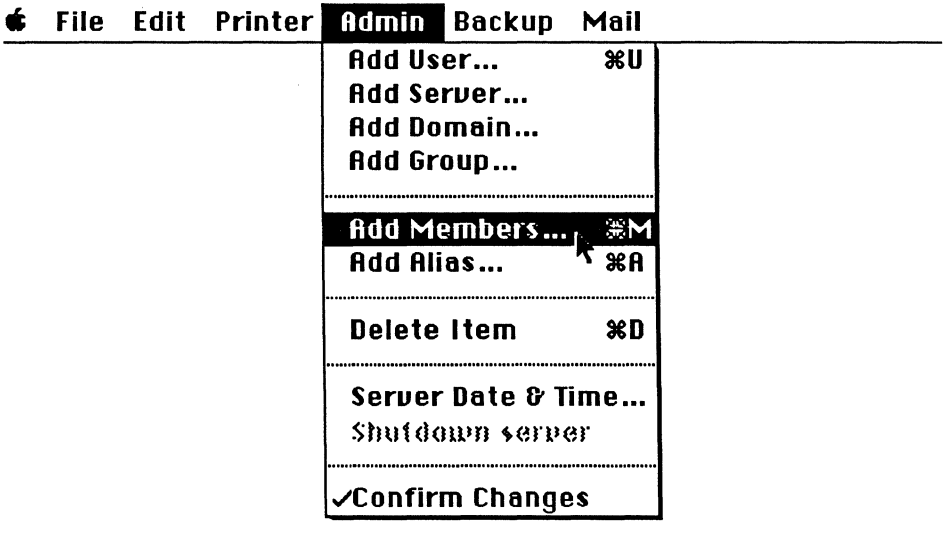
Once you add a group, you can add members to it as needed. Members can be local or remote users, or other groups. Any members you add must already be registered in your Name service; that is, you must have added them to the Name service through the Add User or Add Group dialog boxes.

1. **Log in as Admin and open the 3+NetAccess application.**

   If you do not know how to do this, see "Logging In as Admin" in Chapter 2.

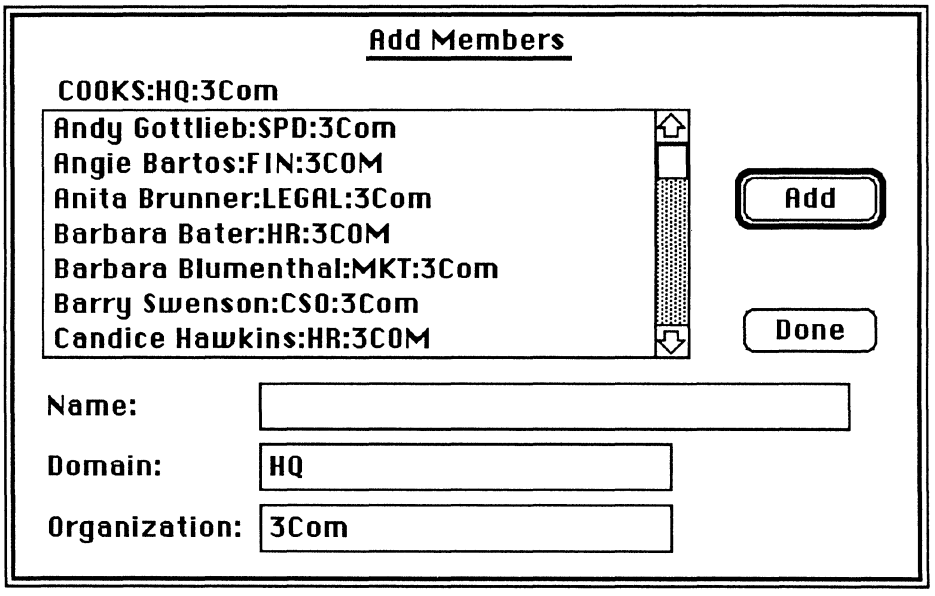
2. **In the 3+ Network Window, select the group to which you want to add members.**

   For information on selecting items in the 3+ Network Window, see Appendix C: Using the 3+ Network.



3. **Choose Add Members from the Admin menu.**

The Add Members dialog box displays the name of the group you selected, lists the current group members, if any, and the current domain and organization, and provides a box for entering a new member's name.



4. **Enter the user name of the new member or the name of another group in the Name text box.**

5. **Enter the member's domain in the Domain text box, if necessary.**

   To add a member to a domain different from the one displayed, enter the correct domain name in the Domain text box. If you do not know the new member's domain name, click Done to close the Add Members dialog box, then find the user or group name in the 3+ Network Window. Select the correct user name and press Command-C to copy it. Select the group, then choose Add Members from the Admin menu again. Press Command-V to paste the user name in the Name text box. The user name is placed in the Name text box.

   If you want to add the members to the domain listed, skip this step.

6. **Enter the member's organization in the Organization text box, if necessary.**

   If the domain displayed in the Domain text box is in an organization different from the one displayed, enter the correct organization name in the Organization text box.

7. **Click Add to add this member to the selected group.**

   Click Done to prevent the addition. When you click Add to add a member, you remain in the Add Members dialog box and can continue to add members to the group.

8. **Click Add to add the last member of a group before clicking Done to close the dialog box.**

   You must click Add after entering each member, or the member will not be added to the group.

Adding Domains and Organizations

You can add domains and organizations to the Name service. The domain name must be unique within the organization. Domains represent different geographical locations, networks, or work groups in a company. You can add a new organization at the same time, specifying a new organization when you add the domain.

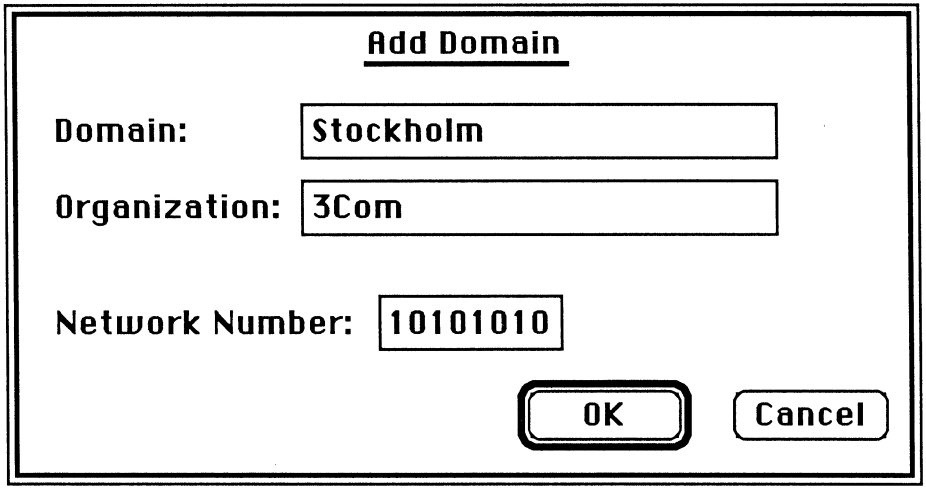
NOTE: If you want to use additional domains, you must create them before adding any network objects to those domains.

1. **Log in as Admin and open the 3+NetAccess application.**

   If you do not know how to do this, see "Logging In as Admin" in Chapter 2.

2. **Choose Add Domain from the Admin menu.**

   The Add Domain dialog box displays the current organization and network number. (Current means the last value used on the network for an object. For example, if you just added a user, the organization displayed in that box when you closed it is still in effect. If you have not changed any values, the values assigned to the login name are used.)



3. **Enter the new domain name in the Domain text box.**

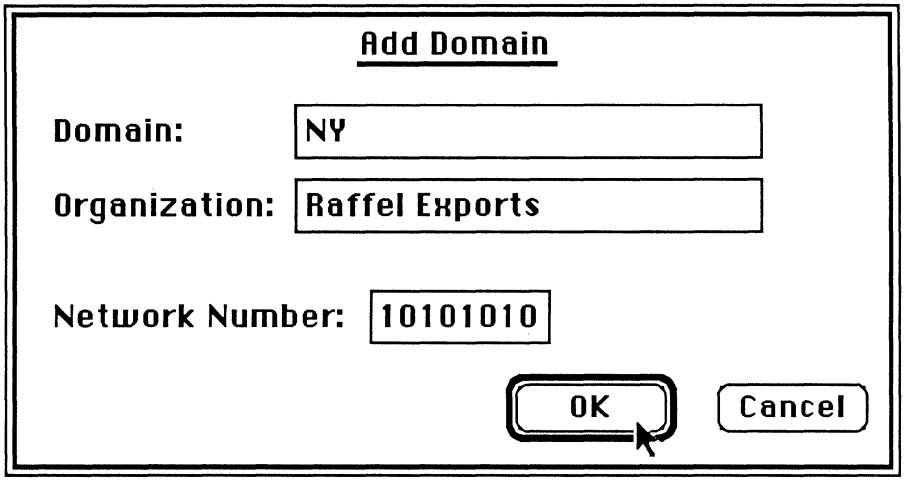
Use meaningful names for domains and organizations, keeping them as brief as possible without sacrificing their meaning. Remotely located domains can be named by their city, such as NY or Stockholm. If the domain is remote, the same domain name must be used in both locations. Local domains could be named Sales, Finance, or any name that describes a unique group.

4. **If you want to create a new organization or place this domain in an organization different from the one displayed, enter the correct organization name in the Organization text box.**

   You do not need to add organizations for remotely located parts of your network. All domains (remote and local) can be part of the same organization. Remember, however, that an organization must have at least one domain. Organization names represent whatever organization the network is serving, such as 3Com.

5. **Enter a new network number, if necessary.**

   The network number is unique to each network and is printed on the label of your *3+Share Server/Name* diskette. You need to enter a different network number *only* when you add domains or organizations that belong to another network.



6. **Click OK to add this new domain:organization pair to the Name service.**

   Click Cancel to bypass the addition.

Adding an Alias

Aliases are nicknames of users, servers, or groups. An alias is useful when addressing mail messages because it can be a shortened version of a user's full name. For example, the user name Keith Grigoletto can be shortened to KeithG by assigning an alias.

An alias can be assigned a domain different from the original user name. For example, if you have several domains in your organization (such as Finance, Pubs, and Marketing), you can set up one central domain that contains aliases for all users (such as HQ). Users can then send mail messages using the central domain even if they do not know each individual's true domain. In this type of arrangement, if you want to send a message to John Beck but don't know his domain, you address the message to John Beck:HQ. The alias for John Beck in the domain HQ will direct the message to him in the correct domain, Finance.

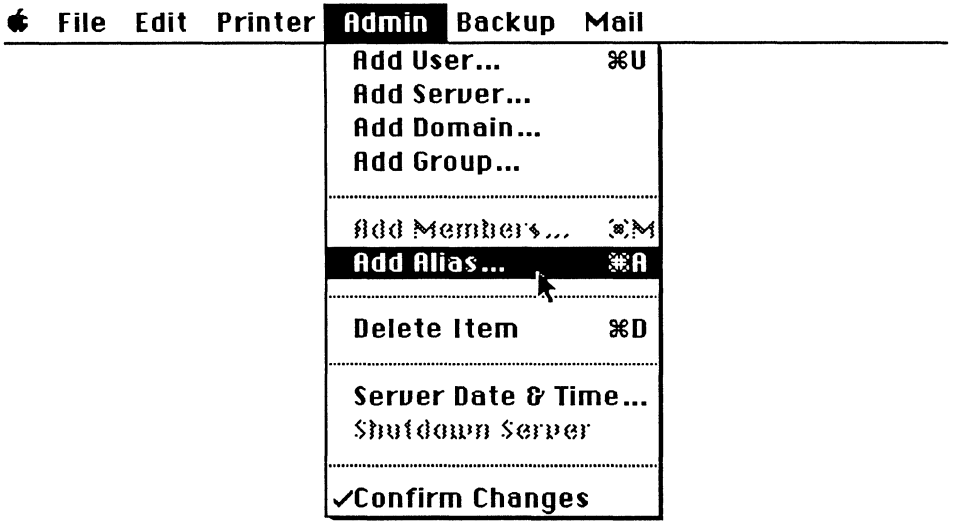
1. **Log in as Admin and open the 3+NetAccess application.**

   If you do not know how to do this, see "Logging In as Admin" in Chapter 2.

2. **In the 3+ Network Window, select the user, server, or group name for which you want to add an alias.**

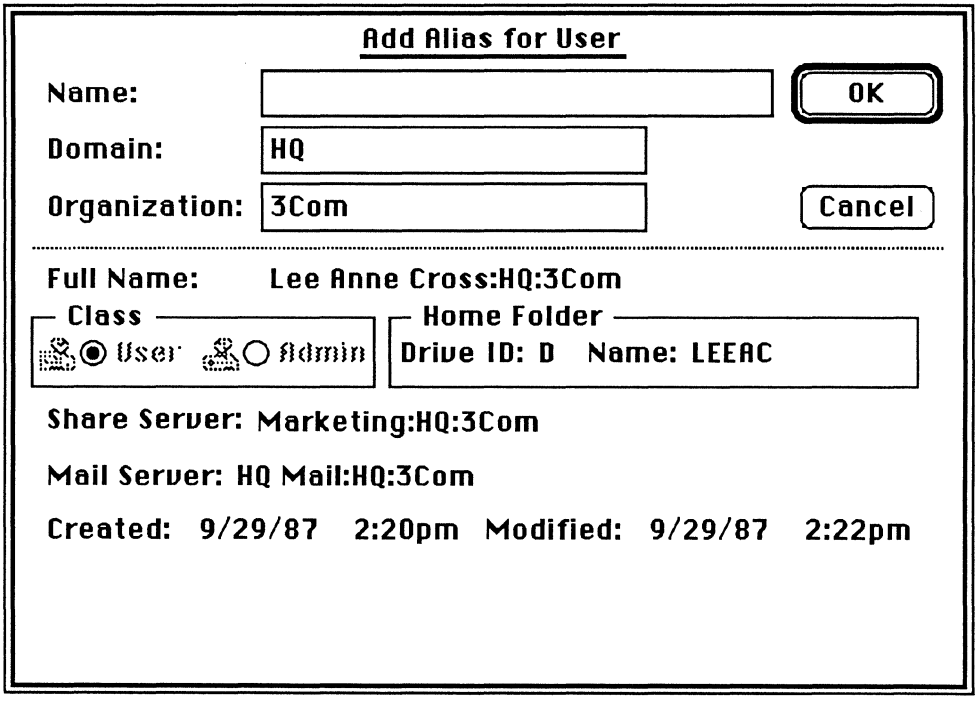
   For information on selecting items in the 3+ Network Window, see Appendix C: Using the 3+ Network Window.

3. Choose Add Alias from the Admin menu.



4. **Enter an alias in the Name text box.**

Assign a short, easy-to-remember alias. If you are adding an alias for a user in a remote domain, you can enter the user's full name. If two users have the same first name and a similar last name, assign a unique alias to each user. For example, aliases for the users Bruce Wylie and Bruce White could be BWylie and BWhite.



5. **Enter a domain in the Domain text box, if necessary.**

   To place this alias in a domain different from the one displayed, enter the correct domain name in the Domain text box. If you want to add the alias to the domain listed, skip this step.

6. **Enter an organization in the Organization text box, if necessary.**

   If the domain shown in the Domain text box is in an organization different from the one displayed, enter the correct organization name in the Organization text box.

7. **Click OK to add this alias to the Name server.**

   To prevent the alias from being added, click Cancel.

8. **Repeat these steps for each alias you want to add.**

Adding a Server

Adding a server means adding a server name to the Name service.

NOTE: You do not need to add the names of servers that are on your network. When a server is started, that server automatically enters its name in the Name service. For this reason, you need to add only remote servers to the Name service.

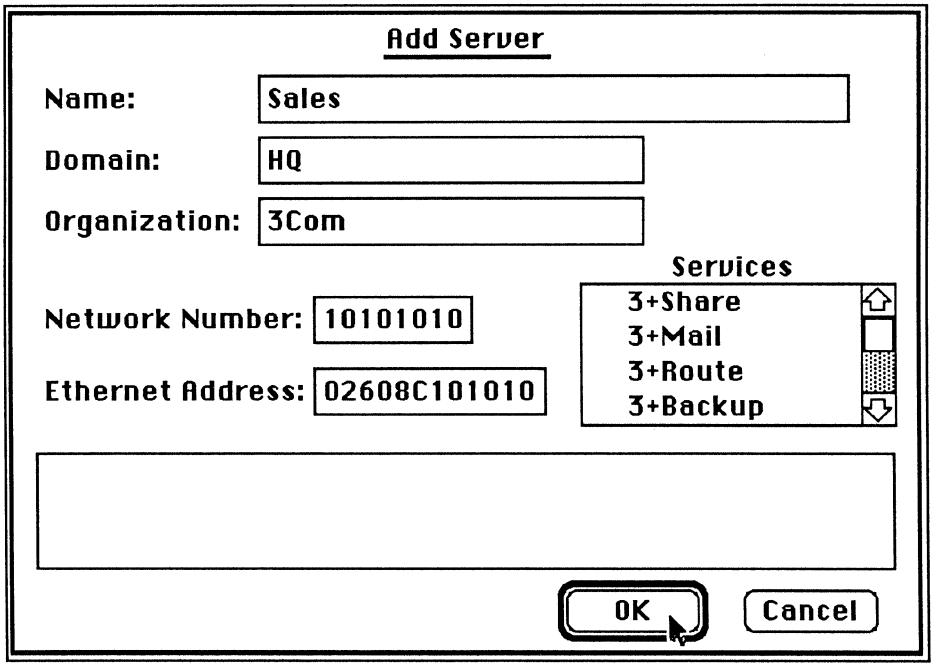
1. **Log in as Admin and open the 3+NetAccess application.**

   If you do not know how to do this, see "Logging In as Admin" in Chapter 2.

2. **Choose Add Server from the Admin menu.**

3. **Enter the server's name in the Name text box.**

Make sure you enter the name exactly as it exists on the remote network. If you are not sure of the exact name, contact the remote network's network administrator.



4. **Enter a domain in the Domain text box, if necessary.**

If the server you are adding to the Name service is in a domain different from the one displayed, enter the correct domain name in the Domain text box. If you want to add the server to the domain listed, skip this step.

5. **Enter an organization in the Organization text box, if necessary.**

   If the domain shown in the Domain text box is in an organization different from the one displayed, enter the correct organization name in the Organization text box.

6. **Enter the network number for the server that you want to add.**

   If you do not know the network number of the remote server, contact the remote network's network administrator and obtain the network number for that network. (To see the network number, the administrator should select the server in the 3+ Network Window and click Get Info.)

7. **Enter the Ethernet address in the Ethernet Address text box.**

   If you do not know the Ethernet address of the remote server, contact the remote network's network administrator and obtain the Ethernet address for the server. (To see the Ethernet address, the administrator should select the server in the 3+ Network Window and click Get Info.)

8. **Check the services installed on the server by clicking the names of the appropriate services.**

   A check mark appears next to that service. Scroll through the list using the scroll bar. If you do not know what services are installed on the remote server, contact the remote network's network administrator. (To see what services are installed, the administrator should select the server in the 3+ Network Window and click Get Info.)

9. **Add a comment, if desired.**

   Comments can be up to 100 characters in length.

10. **Click OK to add this server to the network.**

    To bypass the addition, click Cancel.

Deleting a User

Before you delete a user from the Name service, make sure all the user's Shared Folders have been unshared, and the user's Home Folder is empty. To do this, log in as the user, unshare any Shared Folders, and delete the contents of the Home Folder. If you do not know the user's password, first log in as Admin (or a user with Admin capability) and delete the password.

In addition, make sure there are no mail messages waiting to be retrieved by the user. If messages are waiting to be retrieved, delete them before proceeding with these steps. See "Viewing and Deleting Undelivered Mail" in Chapter 6 for instructions.

CAUTION: *Do not* delete users without first unsharing their Shared Folders and deleting all files and folders in their Home Folder. Attempting to do so results in a message saying that the user cannot be deleted from the Share server. If you instruct 3+ to delete the user anyway, the user is *only* deleted from the Name server and no longer appears in the 3+ Network Window. The user's Home Folder and files still exist on the Share server, but are inaccessible. In addition, if the deleted user's Shared Folders were not unshared, and the Share server is shut down, an error may occur when the server is restarted.

When you delete a user, you should also delete any aliases associated with the user's name.

1. **Log in as Admin and open the 3+NetAccess application.**

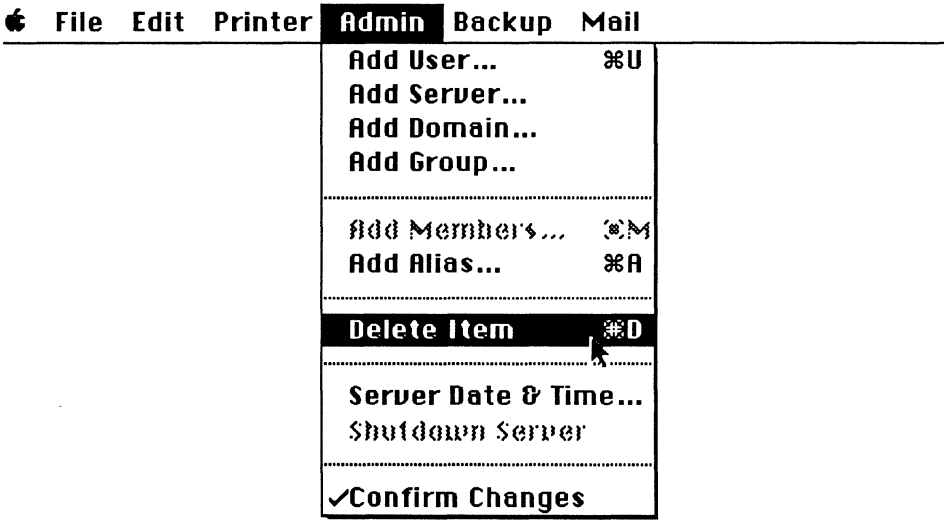
   If you do not know how to do this, see "Logging In as Admin" in Chapter 2.

2. **In the 3+ Network Window, select the name of the user or alias you want to delete.**

   For information on selecting items in the 3+ Network Window, see Appendix C: Using the 3+ Network Window.

3. **Choose Delete Item from the Admin menu.**

A message is displayed to verify that you want to delete the user or alias.



4. **Click OK to delete the user or alias from the network.**

The selected user or alias is deleted from the network.

Deleting a Domain

When you delete a domain from the Name service, you also delete all entries within that domain. Deleting the last domain in an organization deletes the organization from the Name service.

CAUTION: Deleting a domain also deletes all users, servers, printers, and aliases from that domain. Adding the domain again does not retrieve the lost entries. Before you delete a domain, display the entries in that domain and be sure that you want to delete all of them.

1. **Log in as Admin and open the 3+NetAccess application.**

   If you do not know how to do this, see "Logging In as Admin" in Chapter 2.

2. **Select the domain that you want to delete.**

   If you do not know how to do this, see Appendix C: Using the 3+ Network Window.

3. **Choose Delete Item from the Admin menu.**

   A message is displayed to verify that you want to delete the domain.

4. **Click OK to delete the domain from the network.**

   The domain is deleted from the network.

Deleting an Organization

To delete an organization from the network, delete all of the domains within that organization by following the procedures described in "Deleting a Domain" earlier in this chapter. When all the domains within an organization are deleted, the organization is automatically deleted from the network.

Deleting an Alias, Group, Member, or Server

The following steps can be used to delete an alias, group, member, or server from the network.

You need to delete a server from the Name service only if the server is removed from the network. If an entry exists for a remote server in the Name service, you need to delete the entry if the remote server is removed from its network.

CAUTION: Before you remove a server from the network and delete it from the Name service, copy any files that you want to save to diskettes or to Shared Folders on a different server.

1. **Log in as Admin and open the 3+NetAccess application.**

   If you do not know how to do this, see "Logging In as Admin" in Chapter 2.

2. **Select the alias, group, member, or server you want to delete.**

   If you do not know how to do this, see Appendix C: Using the 3+ Network Window.

3. **Choose Delete Item from the Admin menu.**

   A message is displayed to verify that you want to delete the selected item.

4. **Click OK to delete the selected item from the network.**

   The selected item is deleted from the network.

Deleting a User Password

You can delete a user's password when you need to log in as a particular user and you do not know the user's password. You can also delete a user password if a user forgets a password and wants to add a new one.

1. **Log in as Admin and open the 3+NetAccess application.**

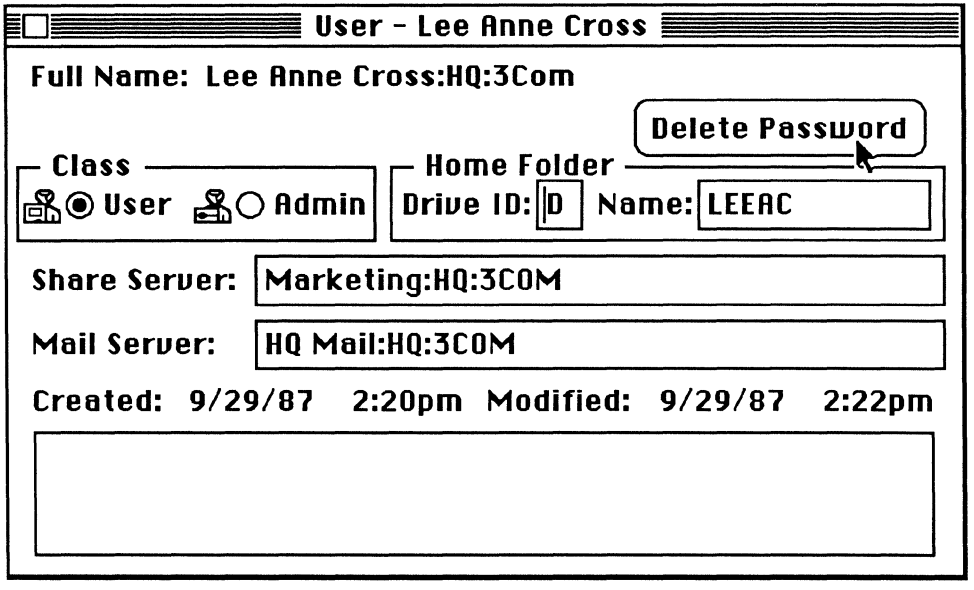
   If you do not know how to do this, see "Logging In as Admin" in Chapter 2.

2. **Select the user whose password you want to delete.**

   If you do not know how to do this, see Appendix C: Using the 3+ Network Window.

3. **Click Get Info.**

   The user Get Info window appears on the screen.



4. **Click Delete Password.**

5. **Close the user Get Info window and click Yes in the Save Changes dialog box.**

   Click the close box to close the Get Info window. Because you made changes, you are asked if you want to save them. Click Yes to save the changes made. The user's password is deleted from the network. Click Cancel to return to the Get Info window without saving the changes.

Modifying a Server

You can change server information for a specific server. Entries for servers on your network are automatically updated when you restart the server. You can modify server entries manually for servers in remote locations. You can also use this procedure to correct errors made when adding a remote server to the Name service.

1. **Log in as Admin and open the 3+NetAccess application.**

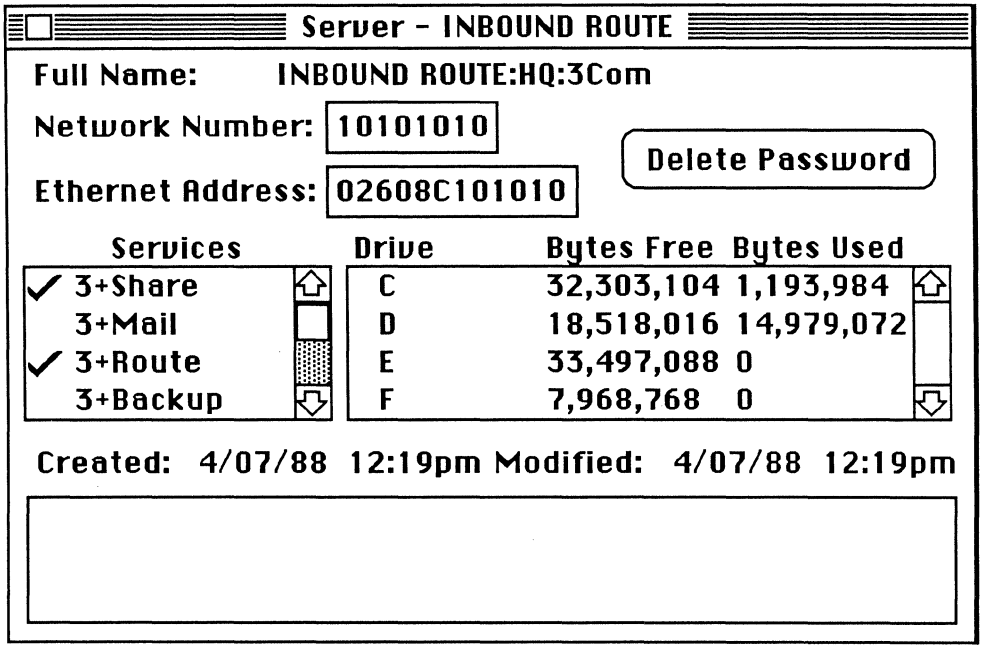
   If you do not know how to do this, see "Logging In as Admin" in Chapter 2.

2. **Select the server that you want to modify.**

   If you do not know how to do this, see Appendix C: Using the 3+ Network Window.

3. **Click Get Info.**

The server Get Info window appears on the screen.



4. **Enter new server information as necessary.**

You can change the network number, the Ethernet address, the services contained on that server, and the comments. To check a service, click on that service. To uncheck a service, click on that service. You can correct previous entry errors.

NOTE: Checking a service in the Services list *does not* install or remove the service from the server. Changes made in this window affect only the Name service's knowledge of the services installed on a server.

5. **Close the Get Info window to complete your entries.**
6. **Click Yes to save the changes you entered.**

Modifying a Domain

If a domain is moved from one network to another, or if a domain's network number is entered incorrectly, you can modify the domain to reflect the new or corrected network number. When you modify a domain, you can change only its network number, not its name.

1. **Log in as Admin and open the 3+NetAccess application.**

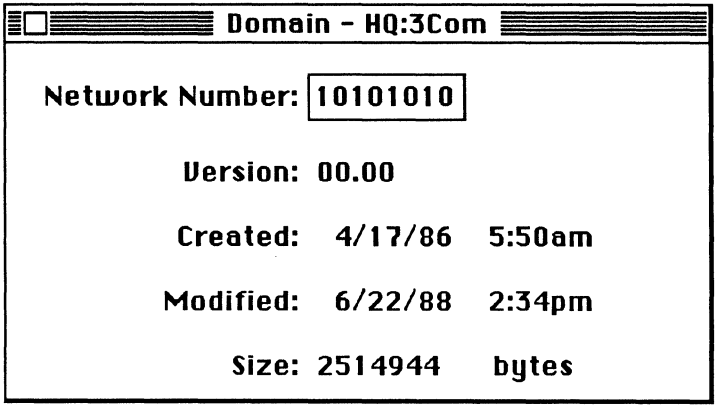
   If you do not know how to do this, see "Logging In as Admin" in Chapter 2.

2. **Select the domain that you want to modify.**

   If you do not know how to do this, see Appendix C: Using the 3+ Network Window.

3. **Click Get Info.**

   The domain Get Info window appears on the screen.



4. **Change the Network Number information, if desired.**
5. **Close the Get Info window.**
6. **Click Yes to save the changes that you entered.**

Modifying a User

If you want to change a user's class (User or Admin), or the comment associated with a user, follow these steps.

NOTE: To change a user's share server or Home Folder name and/or location, follow the steps in "Moving Users" in Chapter 2. To change a user's mail server, follow the steps in "Changing a User's Mail Server" in Chapter 6.

1. **Log in as Admin and open the 3+NetAccess application.**

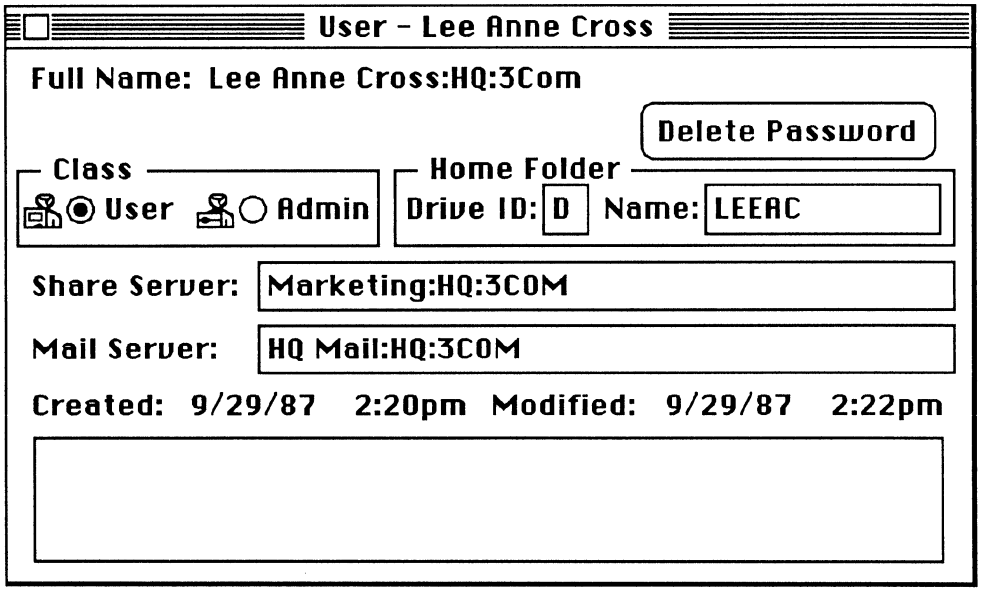
   If you do not know how to do this, see "Logging In as Admin" in Chapter 2.

2. **Select the user that you want to modify.**

   If you do not know how to do this, see Appendix C: Using the 3+ Network Window.

3. **Click Get Info.**

   The user Get Info window appears on the screen.



4. **Change the user's class, if desired.**

   To change the user's class, click the radio button next to the new class, User or Admin.

5. **Change or add a comment, if desired.**

   To change or add a comment, click in the empty box at the bottom of the Get Info window and type a new comment or modify the existing one.

6. **Close the Get Info window.**

7. **Click Yes to save the changes that you entered.**

Modifying a Group

To modify the comment associated with a group, follow these steps:

NOTE: To add members to a group, see "Adding Members to Groups" earlier in this chapter. To delete members from a group, see "Deleting an Alias, Group, Member, or Server" earlier in this chapter.

1. **Log in as Admin and open the 3+NetAccess application.**

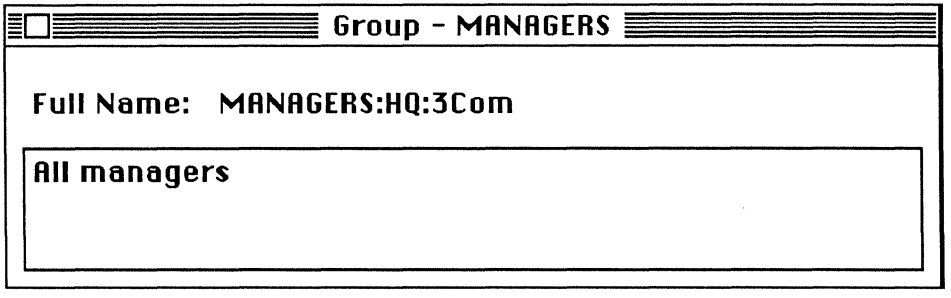
   If you do not know how to do this, see "Logging In as Admin" in Chapter 2.

2. **Select the group that you want to modify.**

   If you do not know how to do this, see Appendix C: Using the 3+ Network Window.

3. **Click Get Info.**

   The group Get Info window appears on the screen.



4. **Change or add a comment, if desired.**

   To change or add a comment, click in the comment box at the bottom of the Get Info window and type a new comment or modify the existing one.

5. **Close the Get Info window.**

6. **Click Yes to save the changes that you entered.**

Setting Server Date and Time

If your geographical area observes Daylight Savings Time, or if you want to adjust the date or time on your network's Name server, use this procedure. You can change the date and time only for the network's Name server. All other servers on the network get their date and time from the Name server when they are started.

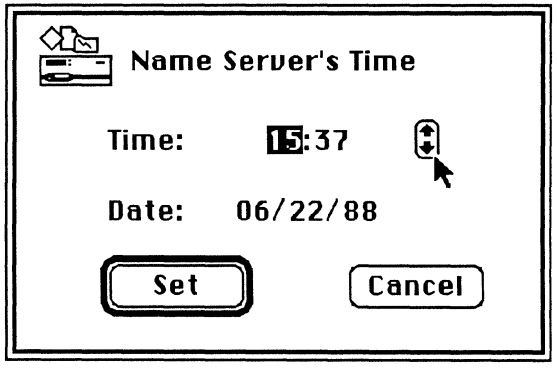
NOTE: Each Macintosh netstation maintains its own date and time on its internal clock.

1. **Log in as Admin and open the 3+NetAccess application.**

   If you do not know how to do this, see "Logging In as Admin" in Chapter 2.

2. **Choose Server Date & Time from the Admin menu.**

   The Name Server's Time dialog box appears on the screen.



3. **Click the hours or minutes to change the time.**

   When you click the hours or minutes, arrows appear at the side of the time. Click the arrows or type a new number to change the time.

4. **Click the month, day, or year to change the date.**

   When you click the month, day, or year, arrows appear on the side of the date. Click the arrows or type a new number to change the date.

5. **Click Set to set the Name server's new time and date.**

   The Name server has a new time and date. Click Cancel to keep the original settings.

Chapter 4: 3+Share Print Service

Maintaining printers on the network involves more than just making sure they are plugged in and have paper available. One of the advantages of the 3+Share Print service is that you can allocate printers to fit your needs today and change the printer allocations as appropriate to fit your needs tomorrow. The 3+NetAccess application allows you to use all of the printers cost effectively.

The Print service allows you to share printers attached to servers on your network. You can make a network printer accessible to users by assigning a shared printer name. The Print service allows users to send, or spool, files to a network printer and continue working without waiting for the files to finish printing. This is called print **spooling.** The 3+Share Print service does the waiting for you so that you can continue working.

How Are Printers Shared?

Only the server-user can share network printers. The name you give to a network printer is called a shared printer name and can be up to eight characters long. Shared printer names function in the same way as Shared Folder names, except that no access rights are used. You can assign passwords to shared printer names to control user access.

NOTE: Assign meaningful names to the printers you use on the network. This helps users identify which printer is best suited for their needs. From a Macintosh netstation, you can access any PostScript printer.

How Are Printers Accessed?

Once a printer has been shared by the server-user, any user on the network can access it by linking to the shared printer name and providing the password, if one exists. See the *3+Share for Macintosh User Guide* for complete details on linking printers.

After linking to a shared printer, users can print files from any application just as they normally would. The only difference is that the files are sent to a print queue on the server and printed on the shared printer instead of being sent to a printer attached directly to the user's Macintosh or to LocalTalk.

What Is a Print Queue?

The print queue stores print files on the server while they wait to be printed. The Print service allows you to spool files to the print queue and continue working on your Macintosh. A sample print queue is shown below. When files are added to the print queue, they are called **print jobs** or just jobs. Each job in the print queue has its own characteristics. Tables 4-1 and 4-2 show what these characteristics mean.

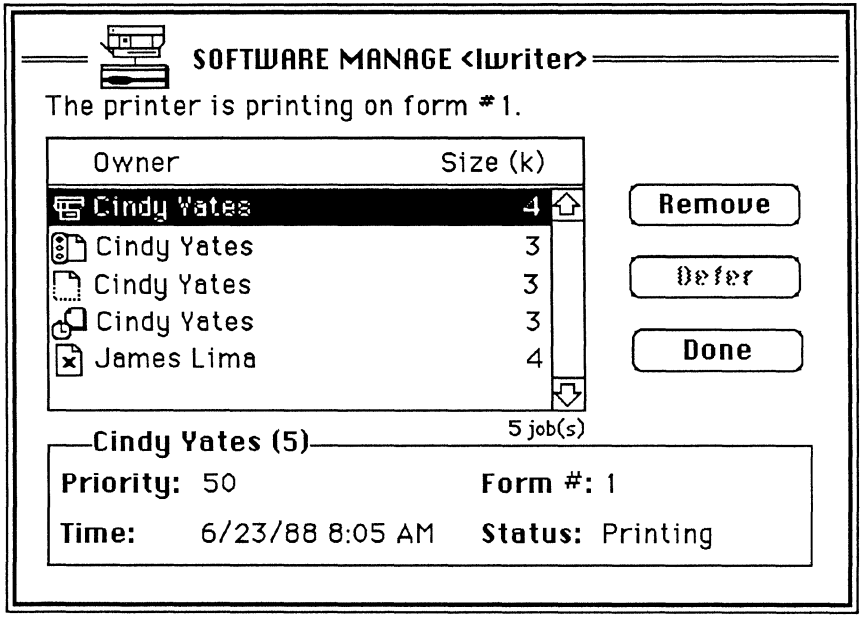


Table 4-1. Printer Information

Characteristic	Meaning
Priority	The priority of the job in relation to other jobs in the queue. The lowest priority is 1, the highest 99. Unless changed, all jobs have a priority of 50.
Form #	The type of paper or form the job should print on. The number specified must match the form number assigned to the shared printer name. Unless changed, all jobs use form number 1.
Time	The date and time the job was sent to the print queue. This characteristic cannot be changed.
Status	The current status of the job.

Table 4-2. Status Information

Icon	Status	Meaning
	Printing	The job is being printed.
	Waiting	The job is ready to print, but other jobs are in the queue ahead of it.
	Deferred	Printing the job has been deferred by the owner until a later time. It will rise in the queue, but will not print until released by the owner.
	Spooling	The user selected the hold option before sending files to be printed. All files sent by the user are added to this print job until the hold is released. Or, the user is still in the process of sending a job to the printer.
	File error	Something is wrong with the file waiting to print. Delete the print job and resend the file.

Manipulating the Print Queue

Users can alter characteristics (except time) for their own print jobs. Users can also delete their own print jobs from the print queue.

As network administrator, you can change the priority of any user's print job. You can also delete any user's job in the print queue. You can change the priority of one or more print jobs if you notice that someone is dominating the printer by assigning a high priority to all their jobs. The ability to delete any job comes in handy if jobs have been sent to the wrong printer or if there is an error in a job that is preventing other jobs in the queue from printing.

In addition to changing priorities and deleting jobs, you can move an entire print queue from one printer on a server to another printer on the same server. This can be important if one printer malfunctions or if you replace it with a different type of printer. See "Moving a Print Queue" later in this chapter for complete information.

Sharing a Printer

A printer is shared by logging in as the server-user. Once shared, a printer can be accessed by all users on the network.

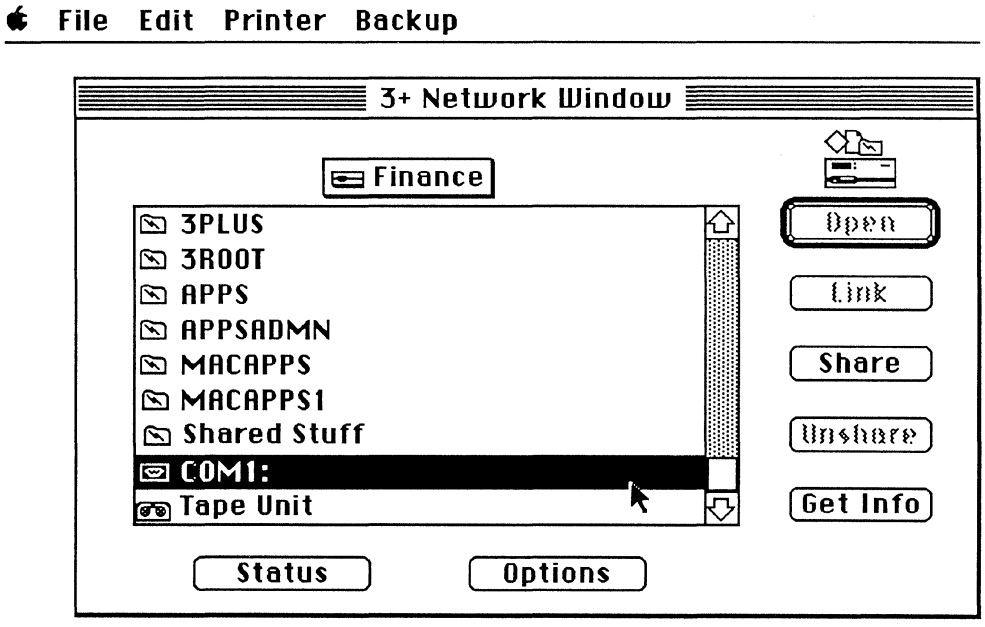
NOTE: The server's printer port(s) must be configured during installation. See the *3+ Installation and Setup Guide* for installation instructions. A printer port can have more than one shared printer name.

1. **Log in as the server-user for the server to which the printer is connected.**

   If you do not know how to do this, see "Logging In as a Server-User" in Chapter 2.

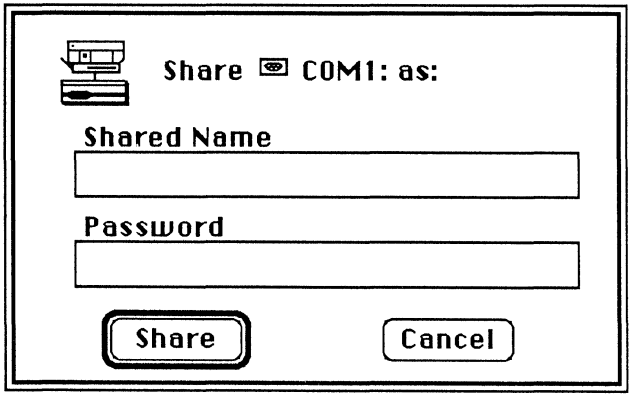
2. **Select the printer port in the 3+ Network Window.**

   To see the printer ports, first select the server's name and click Open. If you do not see the printer port's name in the list, click Options and make sure that the Printer Ports box is checked. To check for the correct port name, look at the physical connection on the back of the server and verify to which server port the printer is attached. If the port still does not appear in the 3+ Network Window, it has not been configured. See the *3+ Installation and Setup Guide* for information on configuring the port.



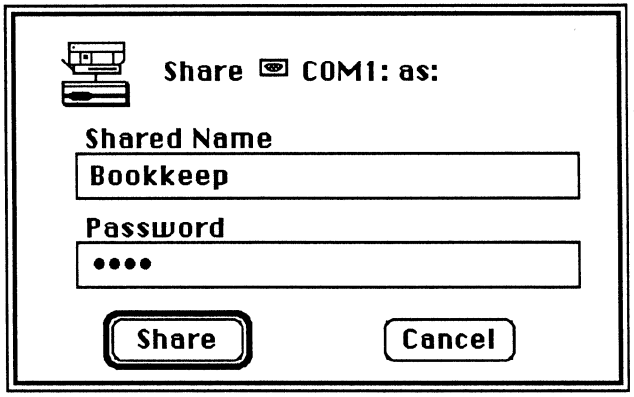
3. **Click Share.**

The Share Printer dialog box appears.



4. **Enter a name for the printer in the Shared Name text box.**

   The name you give the printer is the name that users select in the 3+ Network Window, or in the Chooser, to link to the printer. Shared printer names can be up to eight characters long, with the same valid characters as folder sharenames: the letters "A" to "Z" and "a" to "z"; the numbers "0" to "9"; the special characters dash (-), underscore (_), period (.), single quote ('), and most international characters, such as é, ö, ñ. No spaces are allowed.



5. **If you want to control who can use the printer, enter a password in the Passord text box.**

   Printer passwords can be up to eight characters long. No spaces are allowed. Restricting access to a printer can be useful if a department uses special forms in the printer or consistently has large print jobs. In these situations, the department needs exclusive access to a printer.

6. **Click Share.**

   The 3+ Network Window now shows the new shared printer name. Click Cancel if you change your mind and do not want to share the printer.

7. **Repeat these steps to share each printer attached to the server to which you are logged in.**

Changing a Printer's Name

The shared printer's name is assigned by logging in as the server-user. If you do not know how to log in as a server user, see "Logging In as a Server-User" in Chapter 2. To change a shared printer's name, follow these steps:

1. **Notify users that the printer is unavailable for use.**

   Ask any users who are linked to the printer to unlink.

   NOTE: The printer will not be available again until you complete *all* the steps in this procedure.

2. **Log in as the server-user for the server to which the printer is connected and open the 3+NetAccess application.**

   If you do not know how to do this, see "Logging In as a Server-User" in Chapter 2.

3. **In the 3+ Network Window, select the printer port for the printer whose name you want to change.**

   Select and open the desired server, then select the printer port. If you do not know how to do this, see Appendix C: Using the 3+ Network Window.

4. **Click Share and enter a new name for the printer.**

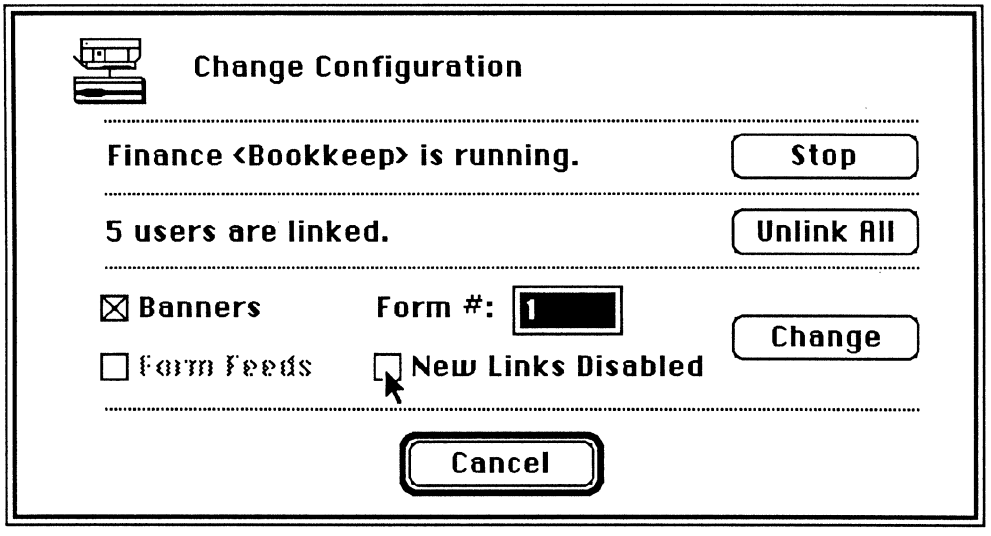
5. **Choose Logout from the File menu and log in as Admin.**

   When you choose Logout from the File menu in the 3+NetAccess application, the login dialog box is displayed. Enter Admin in the Name text box and click Login. The 3+NetAccess application is still active, but now you are logged in as Admin instead of as the server-user.

6. **In the 3+ Network Window, select the old shared printer name.**

7. **Choose Change Configuration from the Printer menu.**

   The Change Configuration dialog box appears on the server.



8. **Click the New Links Disabled check box, and then click Change.**

   This prevent users from accidentally linking to the shared printer name you are going to delete. The 3+ Network Window is displayed.

9. **In the 3+ Network Window, select the old shared printer name again.**

10. **Choose Change Configuration from the Printer menu.**

11. **Click Unlink All.**

    Click Yes to confirm that you want to unlink all users from the printer. This will unlink any users still linked to the printer.

12. **Choose Logout from the File menu and log in as the server-user.**

    When you choose Logout from the File menu in the 3+NetAccess application, the login dialog box is displayed. Enter the name of the server to which the printer is attached in the Name text box and click Login. The 3+NetAccess application is still active, but now you are logged in as the server-user instead of as Admin.

13. **In the 3+ Network Window, select the old shared printer name again and click Unshare.**

    When you selected the shared printer name, Unshare became enabled. The shared printer name is no longer available and does not appear in the 3+ Network Window.

14. **Choose Logout from the File menu and log in as Admin.**

    When you choose Logout from the File menu in the 3+NetAccess application, the login dialog box is displayed. Enter Admin in the Name text box and click Login. The 3+NetAccess application is still active, but now you are logged in as Admin instead of as the server-user.

15. **In the 3+ Network Window, select the new shared printer name.**

16. **Choose Change Configuration from the Printer menu.**

17. **Click the New Links Disabled check box to remove the check mark, then click Change.**

    This allows new links to the printer. The 3+ Network Window is displayed.

18. **Inform users that the printer is now available under the new shared printer name.**

Changing a Printer's Password

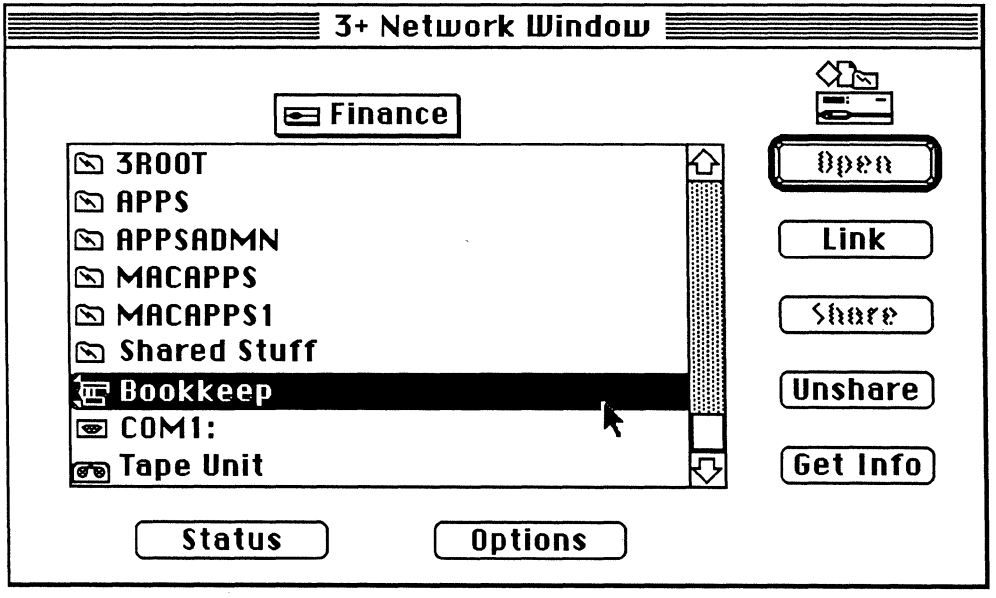
To change a printer's password, or to add a password to a printer that does not have one, follow these steps:

1. **Log in as the server-user for the server to which the printer is connected.**

   If you do not know how to do this, see "Logging In as a Server-User" in Chapter 2.

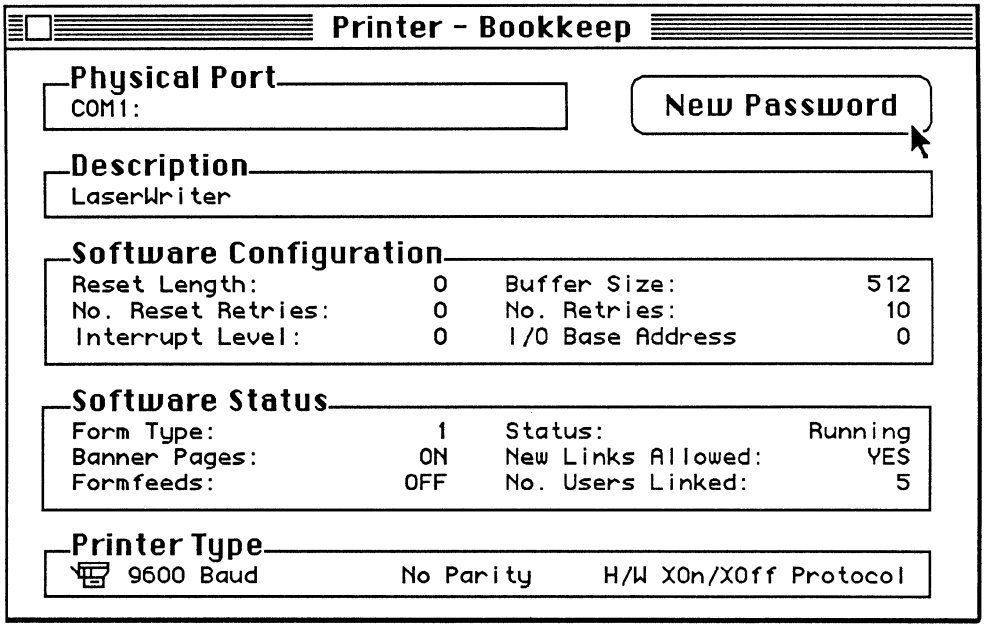
2. **In the 3+ Network Window, select the printer that you want to change or to which you want to add a password.**

   If you do not know how to do this, see Appendix C: Using the 3+ Network Window.

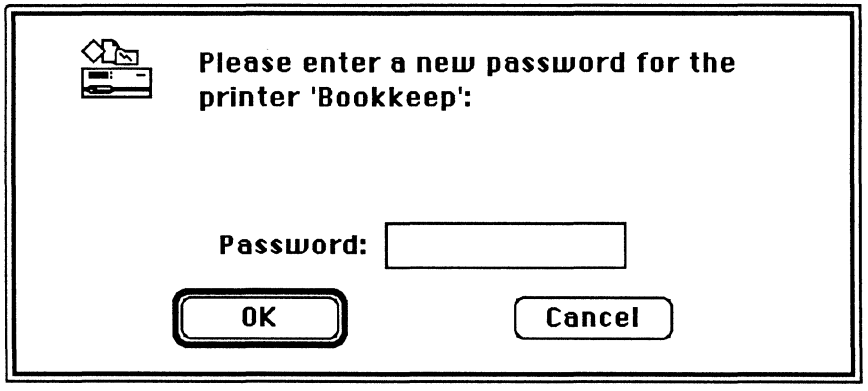


3. **Click Get Info.**

The printer Get Info window appears on the screen.



4. **In the printer Get Info window, click New Password and enter a password in the dialog box that appears.**



5. **Click OK to save the new password.**

   To delete an existing password, click OK without entering anything in the password text box. To leave a password unchanged, click Cancel.

6. **Close the printer Get Info window.**

7. **Click Yes to change the password.**

   The password is changed. Inform users of the new password.

Changing a Printer's Configuration

Each shared printer on the network can be configured to print banner pages, eject a page between jobs, or use a specific form number. These parameters are initially set for each printer when you install the 3+Share software. You can change the parameters at any time by following these steps:

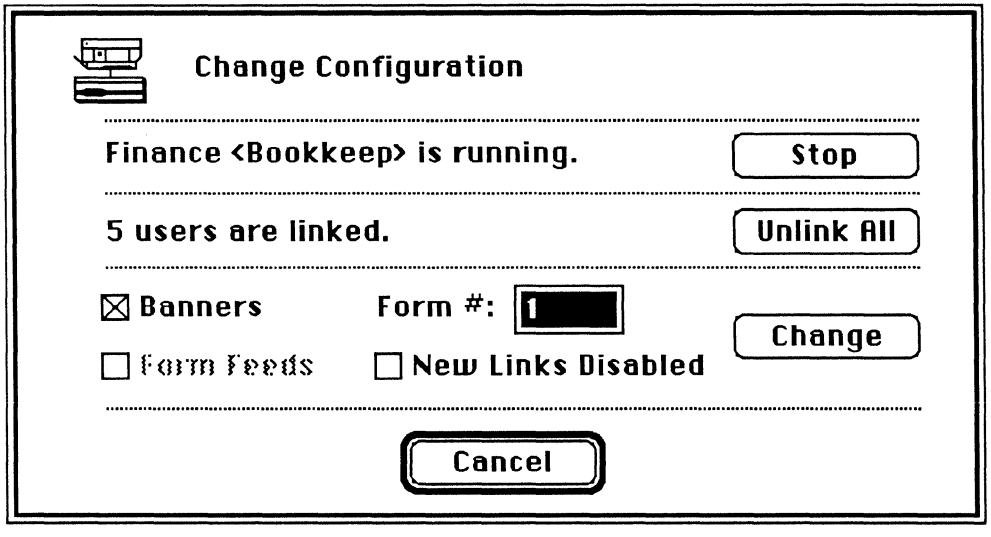
1. **Log in as Admin and open the 3+NetAccess application.**

   If you do not know how to do this, see "Logging In as Admin" in Chapter 2.

2. **In the 3+ Network Window, select the printer whose configuration you want to change.**

   If you do not know how to do this, see Appendix C: Using the 3+ Network Window.

3. **Choose Change Configuration from the Printer menu.**



4. **Enter new information as necessary.**

   Table 4-3 explains printer configuration options.

5. **If you unchecked the Banners check box, changed the Form #, or checked the New Links Disabled check box, click Change to complete the procedure.**

   If you want to stop or resume printing, click Stop or Resume. To unlink all users from the printer, click Unlink All.

Table 4-3. Printer Configuration Options

Option	Meaning
Stop/Resume	Stops or resumes printing on the selected printer.
Unlink All	Unlinks all users linked to the selected printer.
Banner	When the box is checked, a banner page will be printed before each job. The banner page lists the user's name and the date and time of the print job. Each banner requires one sheet of paper.
Form #	A number between 1 and 99 that you can associate with a specific type of form, paper, or process. Only print jobs set to this form number can be printed on the printer until the form number is changed.
Form Feeds	When the box is checked, the printer will automatically skip to the top of the next page between each print job.
New Links Disabled	When the box is checked, users will not be able to link to the printer.

NOTE: When the server is restarted, the printer will return to the settings established during the initial installation and configuration. See the *3+ Tuning Guide* for information on changing the settings permanently.

Removing Print Jobs

Before removing or unsharing a printer, you can move or remove the jobs waiting in its queue. As Admin, you can remove any user's job from the print queue. You can remove all print jobs from a queue, or remove individual jobs. If a user sends a job to the queue in error, you can use this procedure to remove the job. To move a printer's queue, see "Moving a Print Queue" later in this chapter. To remove one or more jobs in a printer's queue, follow these steps.

1. **Log in as Admin and open the 3+NetAccess application.**

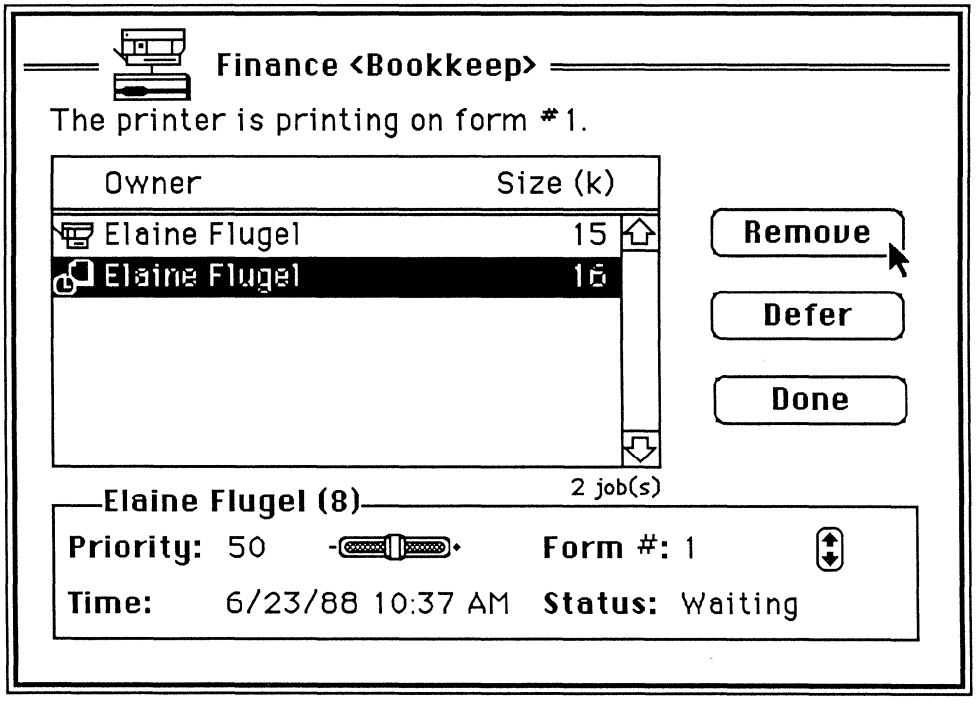
   If you do not know how to do this, see "Logging in as Admin" in Chapter 2.

2. **In the 3+ Network Window, select the printer from whose print queue you want to remove one or more jobs.**

   If no printer is selected in the 3+ Network Window, the status for the currently linked printer is displayed.

3. **Choose Show Status on <*printername*> from the Printer menu.**

The name of the printer you selected is shown in place of <*printername*>. The printer status dialog box appears on the screen. If no printer is linked or selected, the Show Status menu item is disabled.



4. **Select the print job you want to remove.**

You can remove only one job at a time.

NOTE: Print jobs with the status Spooling cannot be removed because the user is still sending information to the queue for that job.

5. **Click Remove.**

   The print job disappears from the queue.

CAUTION: Jobs you remove cannot be recovered. If a job is removed in error, the user must print the document(s) again. Before clicking Remove, make sure you have selected the correct print job.

6. **Repeat these steps for each job you want to remove.**

7. **Click Done.**

Changing a Print Job's Priority

As network administrator, you can change the priority of all jobs in a print queue. This can be helpful if several users have given their print jobs high priority, causing other users' jobs to be excessively delayed in printing. You can change the priority of a job in a print queue as long as it is not printing. To change the priority of one or more jobs in a print queue, follow these steps:

1. **Log in as Admin and open the 3+NetAccess application.**

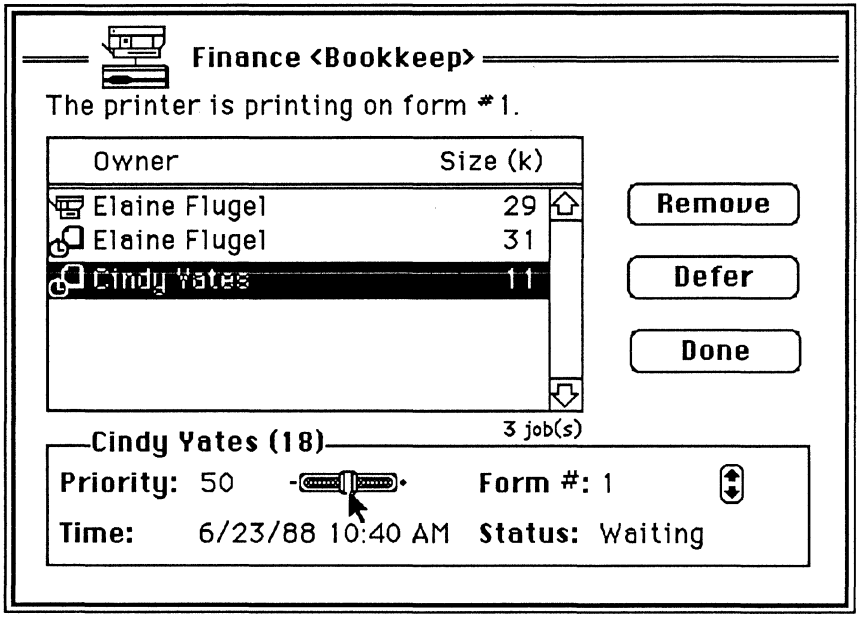
   If you do not know how to do this, see "Logging in as Admin" in Chapter 2.

2. **In the 3+ Network Window, select the printer whose print queue you want to resequence.**

   If no printer is selected in the 3+ Network Window, the status for the currently linked printer is displayed.

3. **Choose Show Status on <*printername*> from the Printer menu.**

The name of the printer you selected is shown in place of <*printername*>. The printer status dialog box appears on the screen. If no printer is linked or selected, the Show Status menu item is disabled.



4. **Select the print job whose priority you want to change.**

Remember, the priority can be changed only on a job waiting to be printed or a job that has been deferred.

5. **Use the Priority bar to select the new priority.**

Jobs with a higher priority will immediately move to the top of the queue. The highest priority available is 99, the lowest is 1.

6. **Click Done.**

Moving a Print Queue

As network administrator, you can move an entire print queue from one printer to another. Print queues can be moved only between two printers attached to the same server. When moving a print queue, the printer you are moving the queue *from* is called the source printer. The printer you are moving the queue *to* is called the destination printer. If a job is printing on the source printer, that spool file continues printing and is not moved with the rest of the queue.

To move a printer's queue, follow these steps:

1. **Log in as Admin and open the 3+NetAccess application.**

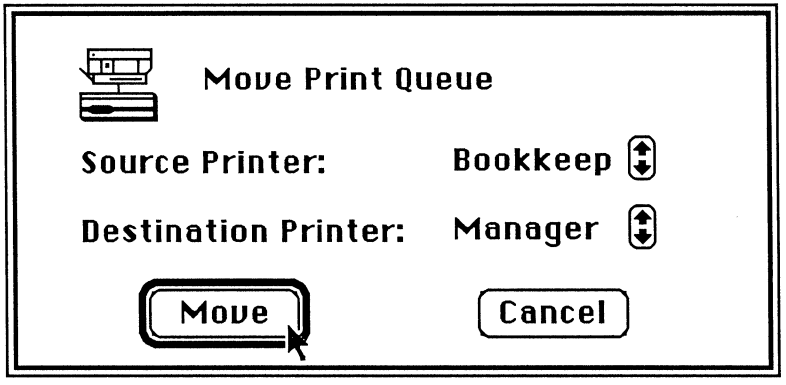
   If you do not know how to do this, see "Logging In as Admin" in Chapter 2.

2. **Select the printer whose queue you want to move.**

   This is the source printer.

3. **Choose Move Queue from the Printer menu.**

The Move Print Queue dialog box appears on the screen.



CAUTION: The source and destination printers *must* be compatible. For example, if the source printer is a LaserWriter, the destination printer must be a LaserWriter or a printer that is compatible with a LaserWriter. If the destination printer is not compatible with the source printer, the print jobs will not be printed correctly.

4. **Verify that the names of the source and destination printers are correct.**

If necessary, use the up and down arrows to change the name of the destination printer. The print jobs in the queue of the source printer are moved to the bottom of the queue on the destination printer, and printed according to their priority.

5. **Click Move to move the print queue.**

Unsharing a Printer

To remove a shared printer from use on the network, you need to unshare it. You can unshare the printer if you want to move it to a different server or if it breaks. Always remove the printer from the network with this procedure before you physically disconnect the printer from the server. When you want to reconnect the printer, use the "Sharing a Printer" procedures, described earlier in this chapter.

1. **Notify users that the printer is unavailable for use.**

   Ask any users who are linked to the printer to unlink.

2. **Log in as Admin and open the 3+NetAccess application.**

   If you do not know how to do this, see "Logging In as Admin" in Chapter 2.

   NOTE: For this procedure, do not switch launch.

3. **In the 3+ Network Window, select the shared printer name for the printer you want to unshare.**

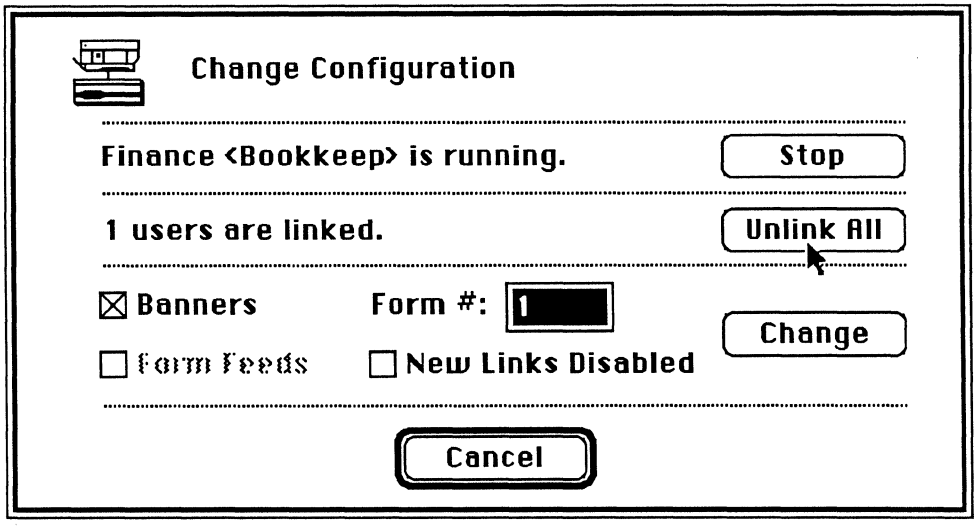
4. **Choose Change Configuration from the Printer menu.**

5. **Click the New Links Disabled check box, and then click Change.**

   This prevent users from accidentally linking to the shared printer name you are going to delete. The 3+ Network Window is displayed.

6. **In the 3+ Network Window, select the shared printer name again.**

7. **Choose Change Configuration from the Printer menu.**



8. **Click Unlink All.**

Click Yes to confirm that you want to unlink all users from the printer. This will unlink any users still linked to the printer.

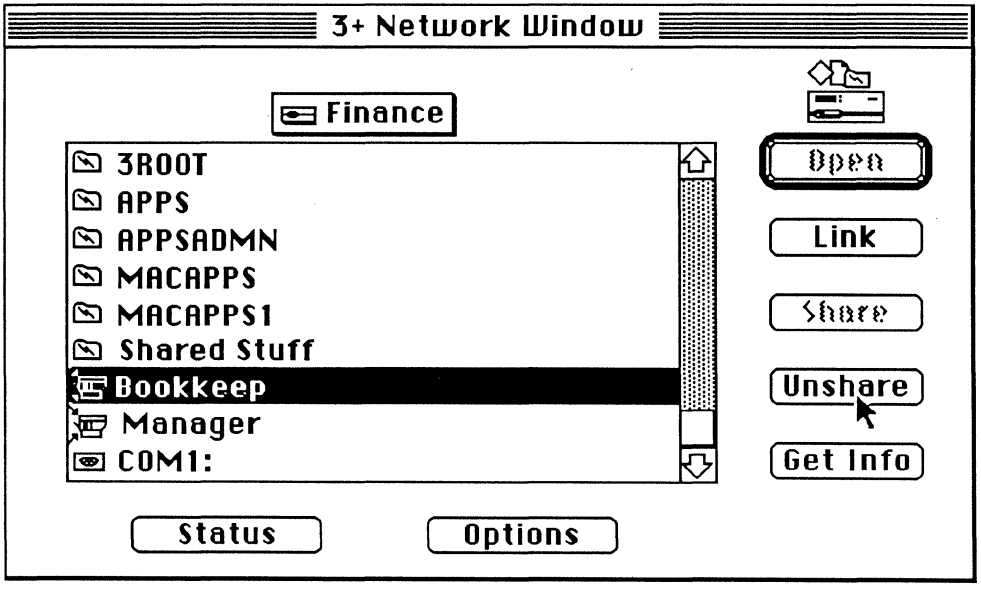
NOTE: If the shared printer name is the only name assigned to the printer, move any jobs still in the print queue to another printer or delete all the jobs. See "Moving a Print Queue" or "Removing Print Jobs" earlier in this chapter for information.

9. **Choose Logout from the File menu and log in as the server-user.**

When you choose Logout from the File menu in the 3+NetAccess application, the login dialog box is displayed. Enter the name of the server to which the printer is attached in the Name text box and click Login. The 3+NetAccess application is still active, but now you are logged in as the server-user instead of as Admin.

10. **In the 3+ Network Window, select the shared printer name again and click Unshare.**

When you selected the shared printer name, Unshare became enabled. The shared printer name is no longer available and does not appear in the 3+ Network Window.

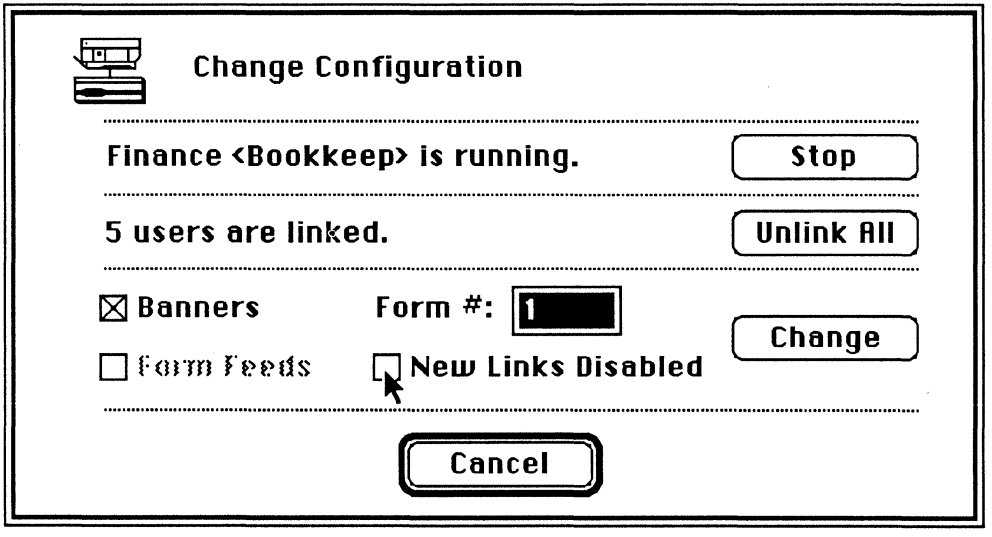


Enabling or Disabling Printer Links

You can temporarily prevent users from linking to a printer by disabling new printer links. This allows you to move the server and printer to a new location or to take it temporarily out of service for repair without having to unshare it.

1. **In the 3+ Network Window, select the old shared printer name.**

2. **Choose Change Configuration from the Printer menu.**



3. **Click the New Links Disabled check box, and then click Change.**

   When the New Links Disabled check box is checked, users are prevented from linking to the shared printer name. The 3+ Network Window is displayed.

   To make the printer available for use again, click the New Links Disabled check box to remove the check mark.

Chapter 5: 3+Backup

A network server stores files and folders. The 3+Backup service lets you make copies of these files and folders for safekeeping. Should data on a server be lost (due to software, equipment, or power failure, or even user error), you can use the backup copies to restore, or replace, damaged or lost files and folders.

To make backup copies, you need:

- A 3Com server equipped with a tape unit and with 3+Backup installed.
- Two (or more) sets of tape cartridges: one for current use, the other for additional safety. Each set consists of one or more tapes, depending on how much information you need to back up.

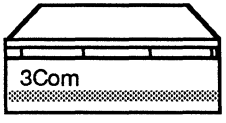
This chapter focuses on regular backup procedures that you control using the 3+NetAccess application. It has two main parts: (1) general background information, and (2) step-by-step directions for using the Backup menu.

Background Information

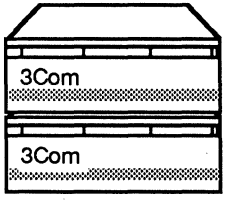
The following sections contain general information and advice. For in-depth information, refer to the *Tape Backup Guide* included in your 3+ software package.

Types of Servers

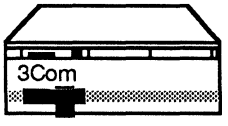
One important function of servers is storing data on hard disks. Figure 5-1 shows several typical servers. Regardless of configuration, each of the illustrated servers should be thought of as a single server.



Simple Server
Houses a hard disk storing about 100 megabytes of data.



Server with expansion unit
Up to five expansion units can be added.



Server with tape unit
The tape unit can back up data from any server: simple server, server with expansion unit(s), or itself.

Figure 5-1. Server Configurations

NOTE: In this chapter, general references to servers do not distinguish one type from another.

Always keep track of the names of servers. The examples and screens illustrated in this chapter describe two servers: a basic server called Personnel:HQ:3Com, and a server with tape unit called Legal:HQ:3Com.

A tape unit server such as Legal can back up data from any server, and later restore it to the same server—including itself, as shown in Figure 5-2.

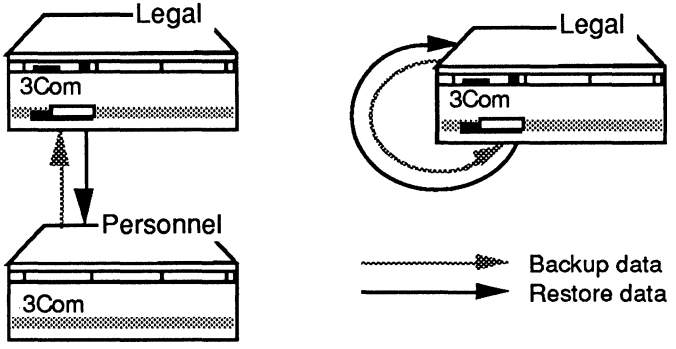


Figure 5-2. Backup and Restore Data Flow

A server with a tape unit can back up any network server, but only one at a time.

Disks and Partitions

On 3Com servers, hard disks are divided into sections called partitions. Partitions are identified by the letters C, D, E, F, and the like. A basic server has three to five partitions, depending on the model. For a three-partition server, the partitions would be identified as C through E; the partitions in the first expansion unit might be identified as F through K.

This identification scheme makes the number of hard disks irrelevant in describing backup operations. Thus, just as the term "server" refers to different configurations of servers, reference to a hard disk implies the set of disks in any configuration, whether one or several.

Backing up an entire disk means backing up all the data on all partitions, starting from partition C.

Backup and Restore Features

The 3+NetAccess application's backup and restore features offer you flexibility. You can choose between:

- **Automatic and manual backups**
  You can start backups with a menu selection, or create a schedule that starts backups for you, even when you are not present.

- **Full and incremental backups**
  A full backup copies all files and folders on the server you specify. An incremental backup copies only those files and folders that have been changed or added since the last backup, whether full or incremental.

- **Partition and entire disk operations**
  Backing up the entire hard disk takes longer than backing up individual sections (partitions). If the data on certain partitions cannot be changed, and if you have already archived that data, you can save time by backing up only those partitions subject to change. When backing up partitions, all the folders in the selected partitions are backed up.

- **Beginning of tape and appending to tape**
  If you are backing up a lot of data, you will need to start the backup at the beginning of the tape. For small amounts of data (such as incremental backups), you can put more than one backup on a tape. This is called appending to a tape.

Guidelines

If a hard disk fails, you may not be able to recover its files. If you have not backed up the files, they are lost. If you did back them up, only the changes made to the files since the last backup are lost. The following sections present a few highlights from the *Tape Backup Guide*.

How Often to Back Up

You should back up every file at least once. After that, back it up again if it changes. Program files do not change, so you need to back them up only after installing them. Data files, on the other hand, can change several times a day, and thus may require frequent backup.

Many companies meet their needs with a full backup once a week, and incremental backups every day or two. The more valuable your data, the more often you should back it up.

NOTE: When restoring Macintosh files and folders, always restore a full backup first and then any incremental backups. This will ensure that the complete Macintosh file structure is restored.

When to Back Up/Restore

Before you start a backup or restore operation, consider these factors:

- **Lengthy operations**
  You need to be present to change tape cartridges for lengthy operations. One tape stores about 60 megabytes of data. Backing up a tape can take as much as 2-1/2 hours, depending on the nature of the data being copied. Restoring is faster; a full tape takes about 1 hour.

- **Communication interference**
  Macintosh netstations connected to a server via Ethernet work well during backup and restore operations. If, however, Macintosh netstations are connected to the tape unit server via LocalTalk, network performance is affected because of shared circuitry. For this reason, it is important to schedule backup and restore operations during periods when network activity is low, for example during evenings or weekends. Macintosh netstations can access the server only when the tape is not spinning. Links to Shared Folders may be lost when the tape is active.

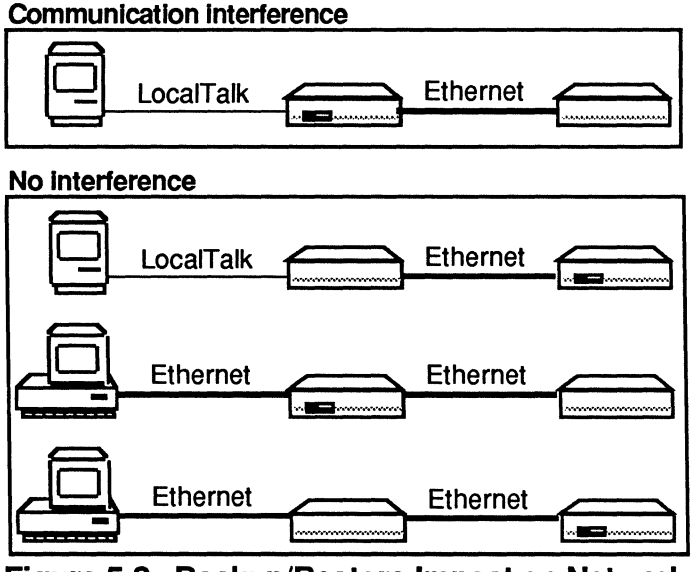


Figure 5-3. Backup/Restore Impact on Network

Who Should Back Up

Server-users and users with Admin capability can perform backup operations. You should adhere to a regular tape backup schedule, and advise users of the backup schedule.

Backups are a shared responsibility. Recommend that users protect especially important files by backing them up on their personal disks.

How Long to Keep Backups

As a general rule, retain one complete set of backups at all times. For example, if you make full backups weekly and incremental backups daily, you should always have one full backup and six incremental backups on file. In addition, you should maintain the previous set of backups on a separate tape—just in case the current tape is damaged during use.

Figure 5-4 shows how to maintain a two-week backup cycle on tape. Label one set of tapes *odd* (for weeks 1, 3, 5, and the like) and the other *even* (for weeks 2, 4, 6, and the like). Week 1, use the *odd* tapes for a full backup on Monday, and incremental backups Tuesday through Sunday. Week 2, do the same with the *even* tapes. Alternating the tapes each week assures you of a complete set of backups at all times.

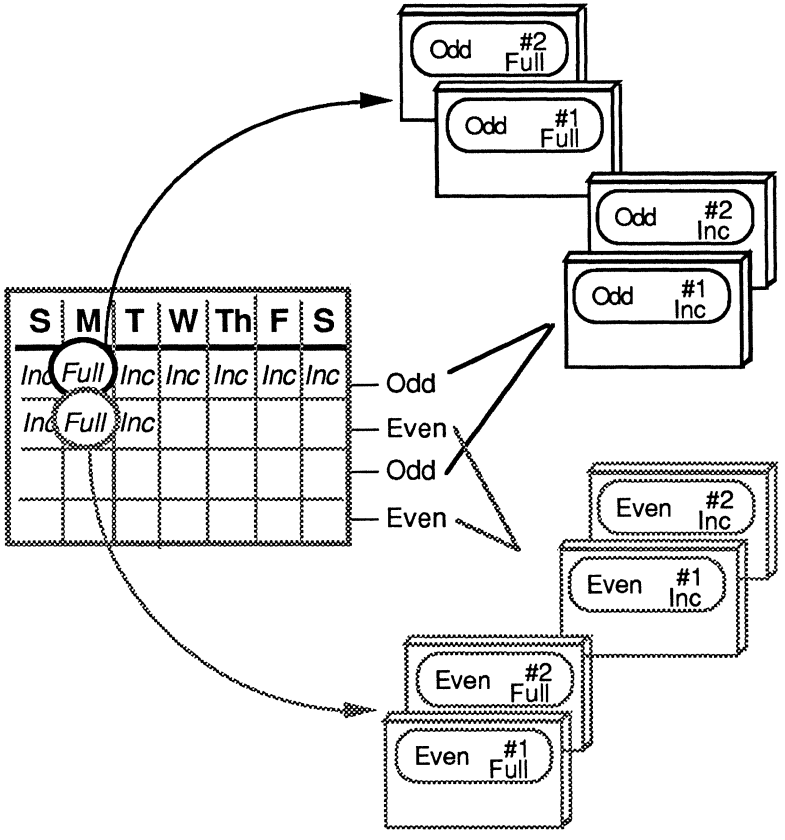


Figure 5-4. Recycling Backup Tapes

CAUTION: Recycling tapes as shown in Figure 5-4 is a minimal plan. Recycling tapes means you erase the old data, leaving no possibility of reconstructing important data and records at a later date. Many companies prefer to save archival tapes regularly—once a month may suffice.

How to Prepare Tapes for Use

You need to erase both new and used tapes before use. Erase new tapes twice. Doing so removes oxide particles and adjusts the tape tension so that the tape functions reliably. Before reusing tapes, erase them once to reset the tension correctly.

Step-by-Step Directions

The Backup menu is part of the 3+NetAccess application, located on the *3+Share Administrator* diskette. The rest of this chapter leads you through all required procedures.

Prerequisite to all procedures:

- Getting ready
- Determining current selection

Backup procedures:

- Erasing tapes
- Backing up data from a server's hard disk
- Creating a tape log
- Restoring data to a server's hard disk
- Monitoring status

Getting Ready

If you have Admin capability, log in to the network as you usually do; otherwise, you can log in as a server-user. Either way is fine for using the Backup menu. Illustrations in this chapter show the screens that users with Admin capability see.

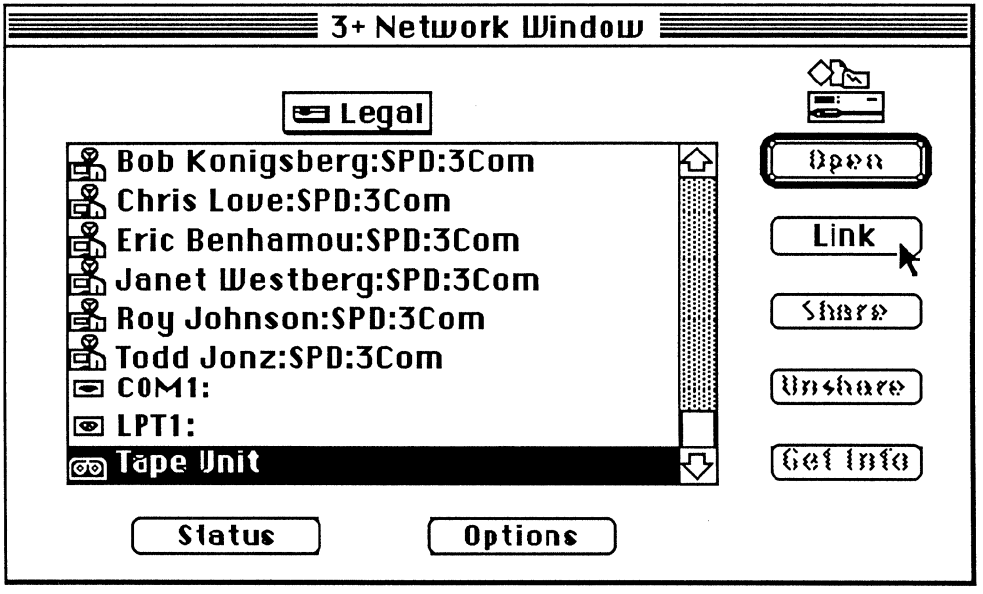
1. **Log in and open the 3+NetAccess application.**

   To log in as Admin, see "Logging In as Admin" in Chapter 2. The 3+ Network Window appears, showing your name in the list box title.

   For server-user instructions, see "Logging In as a Server-User" in Chapter 2, and skip the next step.

2. **If you logged in as Admin, select and open the server you want to work with.**

   If you do not know how to do this, refer to Appendix C: Using the 3+ Network Window. Select the server and click Open. The selected server becomes the new name of the list of network objects.



3. **Select a tape unit, then click Link.**

   A server's tape unit (if it has one), is at the bottom of the list, as shown in the preceding screen illustration. If no tape unit appears in the list (and if you are sure the server has a tape unit), click the Options button. Then click the Tape Drives check box to display the new object in the 3+ Network Window.

You can now successfully select commands from the Backup menu. If you save your startup configuration using the User Status dialog box, the linked tape unit will be saved along with any linked printer or Shared Folders.

Determining Current Selection

To determine the current selection, study the 3+ Network Window, as shown in Figure 5-5. For help with selections, refer to the previous section, "Getting Ready" and Appendix C: Using the 3+ Network Window.

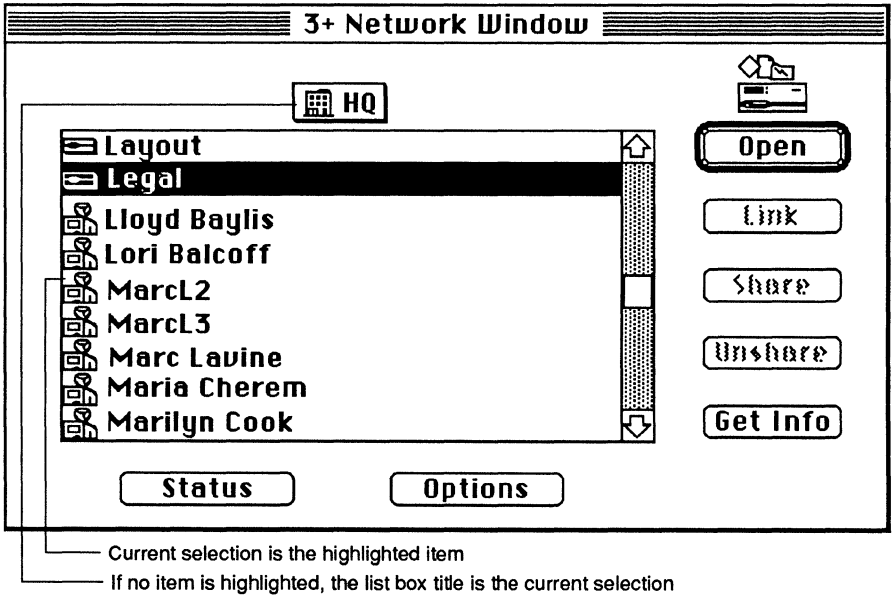


Figure 5-5. Determining Current Selection

You can always pull down the Backup menu, but using it requires that you perform certain operations in the 3+ Network Window first:

Command	Link a Tape Unit	Select a Server
Backup from...	√	√
Restore to...	√	√*
Add Server to Schedule...	√	√
All other commands	√	

* Alternatively, you can select a user or Shared Folder.

If required, messages are displayed to remind you to link a tape unit or to select a server.

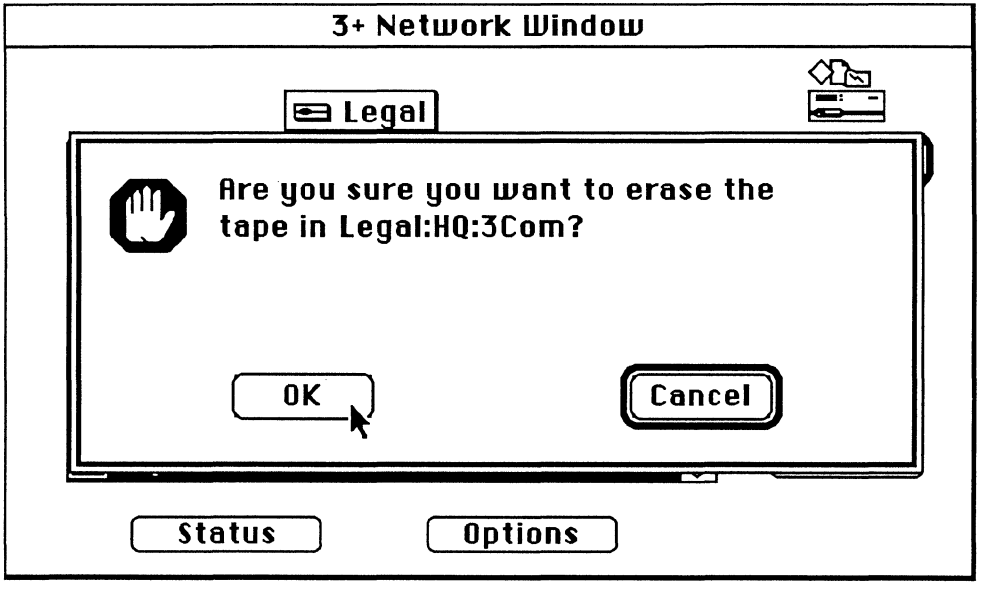
Erasing Tapes

To erase tapes:

1. **Make sure the tape you want to erase is in the tape drive of the server selected in the 3+ Network Window.**

2. **Choose Erase Tape from the Backup menu.**

   If you get a message telling you a link is required, link to the tape unit following instructions in "Getting Ready" earlier in this chapter. After you choose Erase Tape, you see this confirmation message:



3. **Click OK.**

   Erasure takes a few minutes. If you are not absolutely sure that it is OK to start erasing, click Cancel.

CAUTION: You cannot interrupt an erasure once it is under way.

Backing Up Data

You initiate manual and automatic backups from the Backup menu. Setting up automatic backups involves several steps, but takes only a few minutes—well worth the convenience and reliability to most administrators.

3+Backup only backs up files that are closed. If you perform a backup while the server is in operation (on-line mode), only those files that are not being accessed will be backed up. Because the forks of a Macintosh file are opened separately by applications, one fork of the file may not be backed up if the backup is being done in on-line mode. To ensure that your Macintosh files are backed up properly, either perform backups from a PC netstation while the server is not in operation (off-line mode), or make sure all users are unlinked from the server before starting an on-line mode backup. For information on performing an off-line mode backup from a PC netstation, see the *3+ Administrator's Guide Volume I.*

Backing Up Manually

You can do a manual backup any time the tape unit is not in use. To back up the hard disk on a server manually:

1. **Choose the name of the server you want to back up in the 3+ Network Window.**

   For help, see "Getting Ready" earlier in this chapter.

2. **Choose Backup from the Backup menu,**

A dialog box appears, allowing you to select the backup features you want. In Figure 5-6, the server currently selected is Personnel, which is to be backed up on the tape unit server Legal.

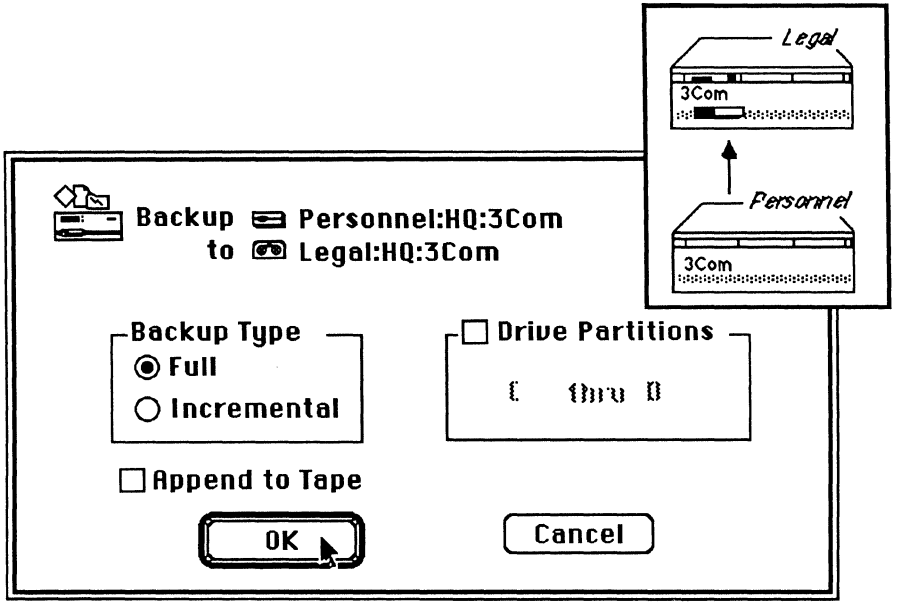


Figure 5-6. Manual Backup—Two Servers

Figure 5-7 depicts the currently selected server, Legal, which is to be backed up on its own tape unit.

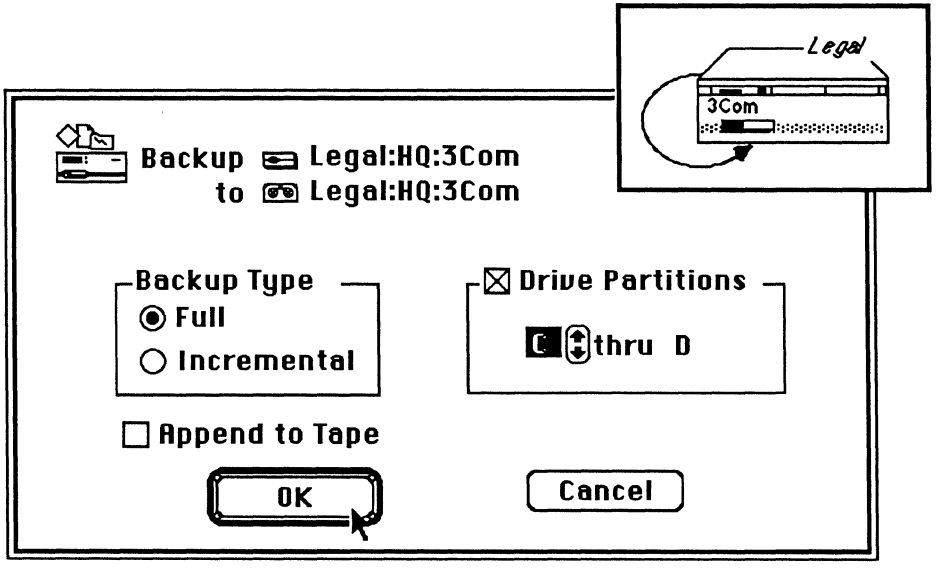


Figure 5-7. Manual Backup—One Server

3. **For an incremental backup, click the Incremental button.**

   Otherwise, a full backup will occur.

4. **To back up only part of the disk, click the Drive Partitions check box; then specify the partitions to be backed up.**

   To back up only one partition, specify the same letter in both positions—C thru C, for example. To change the partition ID, click on the letter you want to change and type the new letter, or click the arrows that appear to the right of the letter.

   NOTE: The partitions backed up will be the ones selected and any in between. If you specify C thru E, for instance, partitions C, D, and E will be backed up.

   You can determine the range of partitions for a server by selecting the server in the 3+ Network Window and clicking Get Info.

5. **To append data to the end of the tape, click the Append to Tape check box.**

   Otherwise, the backup will start at the beginning of the tape, writing over any data already there.

6. **Click OK to begin the backup.**

   If you decide not to do the backup, click Cancel.

7. **If necessary, change the tape cartridge when instructed.**

   Tape backups take 1 to 2-1/2 minutes per megabyte of data. If your backup is lengthy, you may need to change the tape during the process. The server's Liquid Crystal Display (LCD) displays "Change the tape" at the appropriate time.

   NOTE: If more than one tape is required, on certain hardware configurations, you may see the message "See Backup Log" on the LCD just after inserting the second tape. If the backup log contains the message:

   ```
   !! Internal error 10.  rc=17.
   ```

   contact your 3Com reseller.

8. **Check the backup log file to make sure that all the files were backed up.**

   It is very important to examine the backup log to ensure that all your files have been backed up properly. To read the backup log file, see "Reading a Log File" at the end of this chapter.

Backing Up Automatically

Automatic backups involve these tasks:

- Adding (or removing) the server(s) to be backed up to the schedule.
- Scheduling (or rescheduling) the backups for each server.
- Turning automatic backups on and off. Switching off automatic backups on a particular tape unit just deactivates them temporarily. Their schedule information remains intact.

After an automatic backup is completed, be sure to check the backup log file to make sure that all files were backed up correctly (see "Reading a Log File" at the end of this chapter).

NOTE: It is common to speak of the *schedule,* meaning the master schedule for each tape unit server. You never see the master schedule. Instead, you see just one portion at a time, that is, the information for each server to be backed up—a minischedule, so to speak. Thus, *adding a server to the schedule* really means adding a minischedule to a collection of other minischedules. To access the schedule for a backup server (or linked tape unit), the server must have 3+ for Macintosh software installed.

Adding a Server to the Schedule

To add a server means to identify the source server and scheduling information.

1. **Choose the name of the server you want to back up in the 3+ Network Window.**

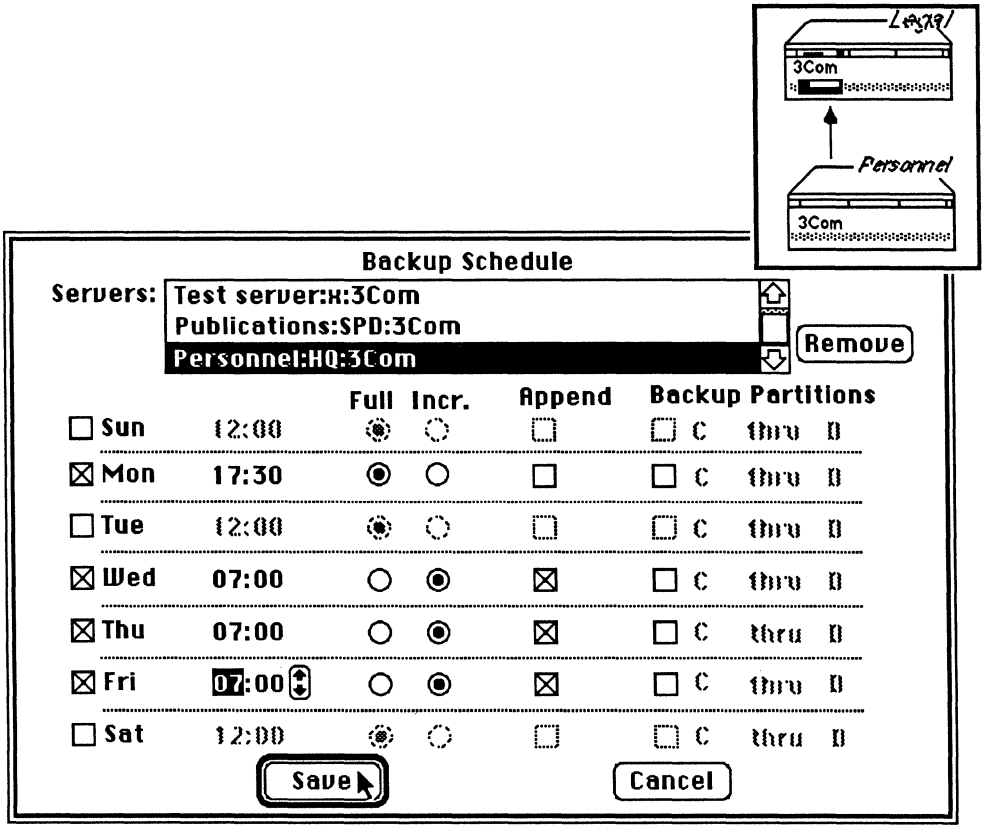
   For help, see "Getting Ready" earlier in this chapter.

2. **Choose Add Server to Schedule from the Backup menu.**

   If the linked tape unit server has a password, a dialog box is displayed asking you to enter the password. A backup schedule is displayed, including a list of servers with automatic backup schedules. Your newly added server is highlighted.

3. Set the backup schedule information.

The schedule illustrated here shows a full backup of the server Personnel:HQ:3Com on Monday at 5:30 p.m. (= 17:30). The backup will be stored from the beginning of the tape, and the entire hard disk, not selected partitions, will be copied. Incremental backups will be appended to the end of the tape at 7:00 a.m. Wednesday through Friday. No backups are scheduled for the weekend or on Tuesday.



To set the information:

- Click the check box for each day you want to do an automatic backup. Then, for each day, click the appropriate check boxes and radio buttons for the backup options you want.
- To change the time or partition ID, click on what you want to change (hour, minute, or ID). Up and down arrows appear; click the arrows to adjust the values, or type new values.
- Times are set on a 24-hour clock; 24:00 represents midnight.

4. **Click Save.**

   Saving adds the information to the schedule. Cancel discards the new information.

Changing a Schedule

To change the settings of an existing schedule:

1. **Choose Show Backup Schedule from the Backup menu.**

   If you get an alert message telling you a link is required, see "Getting Ready" earlier in this chapter.

2. **Choose the server whose settings you want to change from the list at the top of the display.**

   You may need to scroll through the list to display the server.

3. **Change the settings as desired.**

   For details, refer to the previous section, "Adding a Server to the Schedule."

4. **Click Save.**

   Saving changes the existing schedule information. Cancel discards the changes you made.

Removing a Server from the Schedule

To remove a server from the automatic backup schedule:

1. **Choose Show Backup Schedule from the Backup menu.**

   If you get an alert message telling you a link is required, see "Getting Ready" earlier in this chapter. You may also get a message to supply a password to gain access to the 3PLUS Shared Folder.

2. **Highlight the server you want to remove in the list at the top of the display.**

   You may need to scroll through the list to display the server.

3. **Click Remove.**

   The server and its schedule disappear from the list.

4. **Click Save.**

   Saving the removal acts as a double-check to ensure against accidental deletion. Canceling means the server will not be removed from the schedule.

Turning Automatic Backups On and Off

Once you set the backup schedule for your server(s), you need to tell 3+Backup to perform backups according to schedule. You can suspend automatic backups without losing the schedule.

To determine if the automatic schedule is on or off, choose Show Status from the Backup menu. To change the on/off setting:

1. **Choose Turn Auto Backup On (or Turn Auto Backup Off) from the Backup menu.**

   If the backup is already turned on, the option allows you to turn it off, and vice versa. The current setting is the opposite of what is displayed. When you make your selection, the menu closes.

   If you get a message telling you a link is required, see "Getting Ready" earlier in this chapter.

2. **If turning the backup on, make sure a tape cartridge is in the tape drive.**

Interrupting a Backup

To cancel an in-progress backup, automatic or manual:

1. **Choose Interrupt from the Backup menu.**

   A message asks you to confirm the command. When you interrupt a backup, the operation halts after the current file is backed up. To stop it immediately, choose Interrupt from the Backup menu again.

2. **Check the tape log to determine the current status of files.**

   For details, see "Creating a Tape Log" later in this chapter. Study the tape log status information to determine how to proceed.

Identifying Tape Contents

Sometimes you need to search for certain files or verify the contents of a tape before restoring data. There are two ways to determine information about the contents of tape cartridges:

- Examine the *tape header,* which gives information about the first backup or first directory it contains. This method is a quick way of verifying that you have the correct tape for a restore operation.

- Generate a *tape log,* which lists all the files and folders contained on the tape. This process, while time-consuming, gives detailed information.

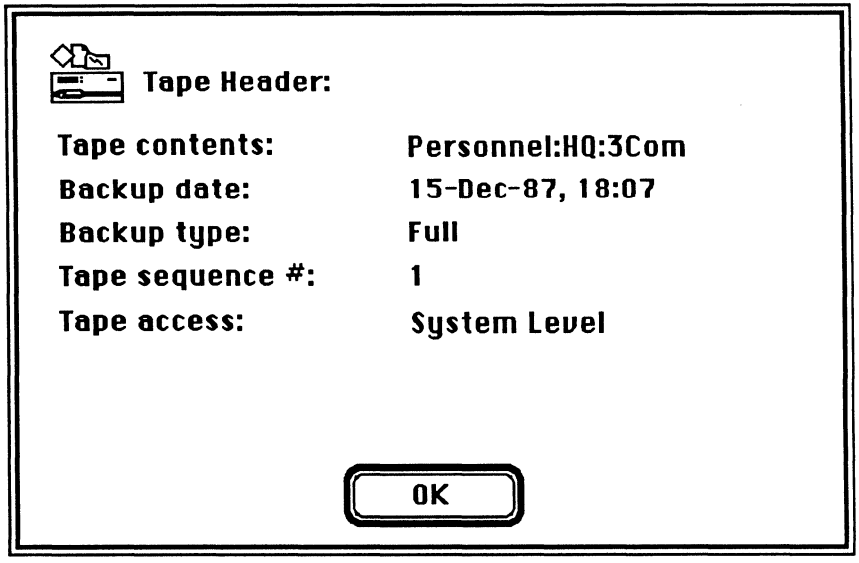
Displaying the Tape Header

To display the tape header:

1. **Insert the tape you want to identify into the tape drive.**

2. **Choose Show Tape Header from the Backup menu.**

If you get a message telling you to link to a tape unit, see "Getting Ready" earlier in this chapter.



NOTE: The tape sequence number is useful when you use more than one tape for a backup; when you change tapes, the server notes the sequence. The sequence number helps you ensure the use of the correct tape for backup operations.

The tape access information helps you identify the version of 3+Backup you need to work with. It reads System Level for 3+Backup 1.2.2 or later. If it reads User Level, you need to reinstall 3+Backup 1.2 or later on the server to restore the data on that tape. This situation might occur when you restore data from archival tapes.

Creating a Tape Log

To create a tape log:

1. **Insert the tape whose contents you want to list into the tape drive.**

2. **Choose Create Tape Log from the Backup menu.**

   The message "Please insert the right tape to be read!" appears to confirm your choice. If you get a message telling you to link to a tape unit, see "Getting Ready" earlier in this chapter.

Creating a tape log is time consuming because the server reads the entire tape and creates a file listing the contents and related details. To read the file, see "Reading a Log File" at the end of this chapter.

After you have created a tape log, you can print it, label it with an identifying name or number that corresponds to a label on the tape, and file it for future reference.

Interrupting Creation of a Tape Log

To cancel an in-progress creation of a tape log, choose Interrupt from the Backup menu. A message asks you to confirm the command, and when you do so, the operation halts immediately.

Restoring Data

You can restore data using one of two methods:

- Restore data to one or more partitions of the server's hard disk.
- Restore data to a single folder.

To restore a single Macintosh file, you must first restore the folder containing the file. Unlike DOS files used on IBM PC or compatible netstations, each Macintosh file and its attributes are defined by two or three DOS files on your 3+ server. If one of these component files is not restored, the Macintosh file will be inaccessible. Restoring the folder containing a Macintosh file ensures that all the DOS component files are restored.

NOTE: With 3+Backup version 1.3 or later, you back up data in on-line mode from a Macintosh netstation or in either on-line or off-line mode from a PC netstation following instructions in the *3+ Administrator's Guide Volume I*. However, to restore Macintosh files, we recommend you use the on-line mode unless you are restoring to an empty disk or partition.

Regardless of which method you use, it is a good idea to rebuild the desktop after restoring data. For instructions, see "After Restoring Data" later in this chapter.

Restoring One or More Partitions

If you are restoring one or more partitions of the server's hard disk, follow these steps. Otherwise, see "Restoring a Single Folder," next.

NOTE: Before restoring partitions of a server's hard disk, it is recommended that you reformat the server partitions that will be restored. For instructions on formatting your server, refer to the documentation accompanying the server. Restoring Macintosh files to directories or partitions that contain data can result in the loss of Macintosh file information.

1. **Choose the server to which you want to restore data in the 3+ Network Window.**

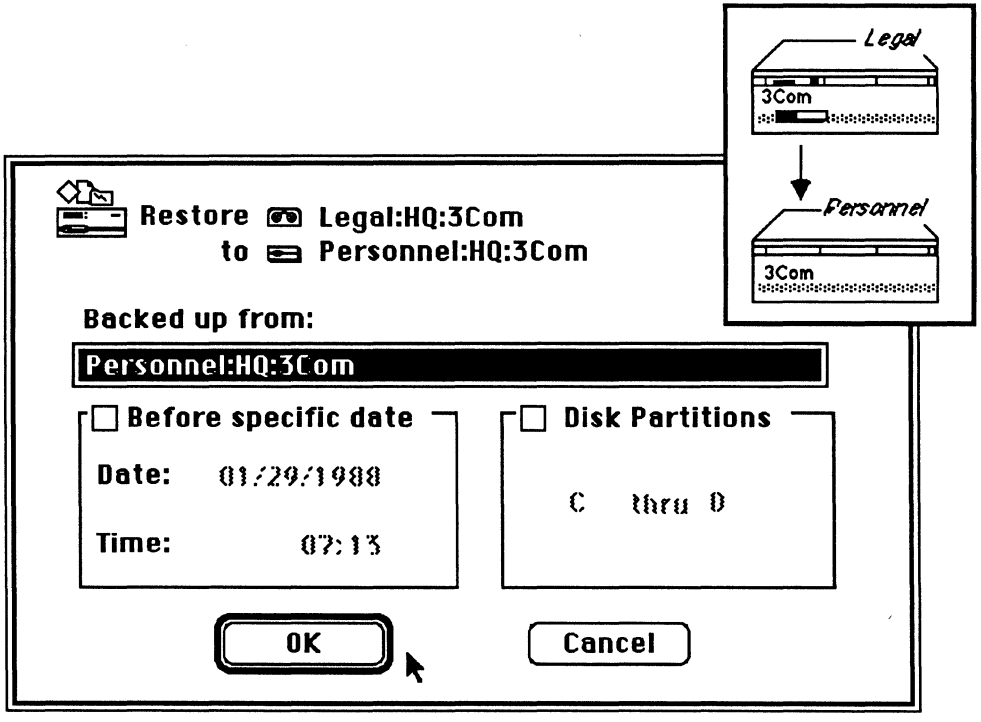
   If you get a message telling you to choose a server or link a tape unit, see "Getting Ready" earlier in this chapter.

2. **Insert the tape containing the backups into the tape drive.**

   To verify the contents of the tape, see "Identifying Tape Contents" earlier in this chapter.

3. **Choose Restore to from the Backup menu.**

The following dialog box is displayed. The top line names the server with the tape unit. The second line and the highlighted text box name the server you selected in the 3+ Network Window.



4. **To restore data to a server other than the one previously backed up, type the name of the original server in the highlighted box.**

   The top line names the server with the tape unit. The second line and the highlighted text box name the server you selected in the 3+ Network Window. The duplication represents the normal situation; that is, data is restored to the same server that you backed up earlier.

CAUTION: Always restore data to the server where the backup originated unless you intend to reorganize your network. Restoring data to a different server may obliterate information already on the new server.

---

5. **Set the information for the restore operation. (Optional)**

   a. If you do not want to restore the most recent backups or all disk partitions, click the appropriate check box(es): Before specific date and/or Disk Partitions.

   b. Click on what you want to change (month, day, time, partition ID). Up and down arrows appear; click the arrows to adjust the values, or type new values. Specify the date of the backup, not the date a file was modified. (Files are modified at various times between backups.)

6. **Click OK to start restoring.**

   A confirming message appears. Click Cancel if you do not want to perform the restore operation. It takes about 1 minute to restore a megabyte of information. If you need to change the tape during the process, the server's LCD displays "Change the tape" at the appropriate time.

Restoring a Single Folder

If you are restoring a single folder, follow these steps.

NOTE: To restore an individual file, first restore the folder containing the file to an empty folder, then copy the desired file to the correct location. Restoring Macintosh files to directories or partitions that contain data can result in the loss of Macintosh file information.

1. **Choose an empty folder, or a user, to which you want to restore data in the 3+ Network Window.**

   The folder you Choose does not need to be a Shared Folder; that is, it can be a folder below a Shared Folder. You can also restore a user's Home Folder by selecting the user in the 3+ Network Window or restore a server-user Shared Folder by selecting the server's name.

   NOTE: While not required, it is a good idea to select an empty folder for restoring data. Once the data has been restored, you can examine and merge the files into an existing folder. Restoring Macintosh files and folders into a folder containing information may result in the loss of Macintosh file information because 3+Backup will attempt to merge the information on the tape with the information in the folder.

2. **Insert the tape containing the backups into the tape drive.**

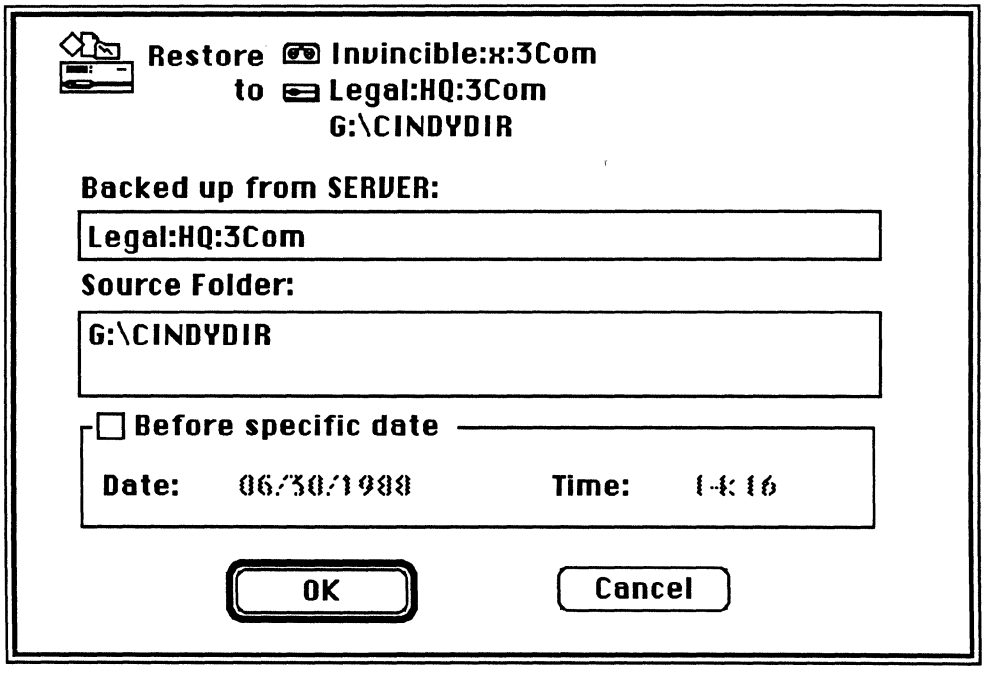
   To verify the contents of the tape, see "Identifying Tape Contents" earlier in this chapter.

3. **Choose Restore to from the Backup menu.**

   The following dialog box is displayed. The top line names the server with the tape unit. The second line names the server and pathname of the folder or user's Home Folder you selected in the 3+ Network Window.

4. **To restore data from a location other than the one you selected in the 3+ Network Window, type the name of the server in the Backed up from SERVER text box and the pathname in the Source Folder text box. (Optional)**

   The second line and the two text boxes name the server and pathname of the folder or user you selected in the 3+ Network Window. The duplication represents the normal situation; that is, data is restored to the same server that you backed up earlier and to the folder you selected.



5. **Set the information for the restore operation. (Optional)**

   a. If you do not want to restore the most recent backups, click the Before specific date check box

   b. Click on what you want to change (month, day, or time). Up and down arrows appear; click the arrows to adjust the values, or type new values. Specify the date of the backup, not the date a file was modified. (Files are modified at various times between backups.)

6. **Click OK to start restoring.**

   A confirming message appears. Click Cancel if you do not want to perform the restore operation. It takes about 1 minute to restore a megabyte of information. If you need to change the tape during the process, the server's LCD displays "Change the tape" at the appropriate time.

7. **Examine the restored files to make sure they are complete and check the restore log file (REST_LOG.1) for messages.**

   Any problems that may have occurred during the restore operation will be shown in the restore log file. For information on reading this file, see "Reading a Log File" at the end of this chapter.

8. **If desired, copy the restored files to any location you want, then discard the previously empty folder.**

Interrupting a Restore Operation

To cancel an in-progress restore operation:

1. **Choose Interrupt from the Backup menu.**

   A message asks you to confirm the command. When you interrupt a restore operation, the operation halts after the current file is restored. To stop it immediately, choose Interrupt from the Backup menu again.

2. **Check the Restore log to determine the current status of files.**

   The file REST_LOG.1 is in the 3BACKUP folder located in the 3PLUS Shared Folder (see "Reading a Log File" at the end of this chapter).

After Restoring Data

After a restore operation, users may see incorrect icons for files or receive a message saying that a file cannot be opened because the application cannot be found. If this occurs, desktop database files on the server that are used to support the Finder™ may need to be rebuilt. Tell users who experience these problems to follow these steps:

1. **From the Finder (*not* the MultiFinder), open the 3+NetAccess application.**

2. **Link to your Home Folder.**

   Users link to Home Folders; server-users should link to their Shared Folders. You, the administrator, must log in as server-user to do this.

3. **Quit the application, holding down Command-Option until you return to the Finder and see a message about rebuilding the desktop.**

4. **Click OK for the Home Folder or server-user Shared Folder only.**

   The desktop database will be rebuilt by the Finder, and you can resume other work. Click Cancel for any Shared Folder except the Home Folder or a server-user Shared Folder.

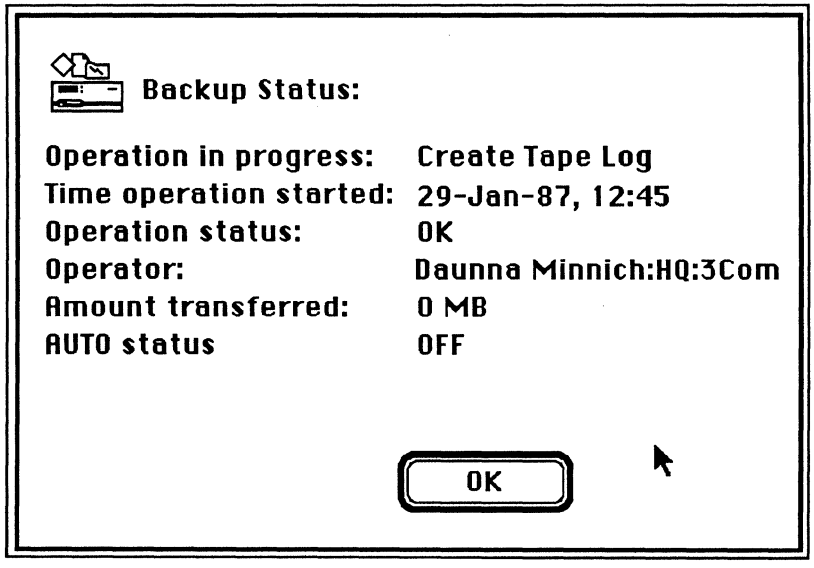
NOTE: Unlike rebuilding the desktop for local disks, you will not lose file and folder comments. Rebuilding a 3+ Shared Folder will rebuild only application location and icon databases.

Determining Status

You can monitor current and past activity. Selections from the Backup menu supply information about operations in progress. Past activity is recorded in log files.

Operations in Progress

To find out if an operation is in progress, choose Show Status from the Backup menu. The Backup Status dialog box identifies the current activity, the initiator, and other useful information.

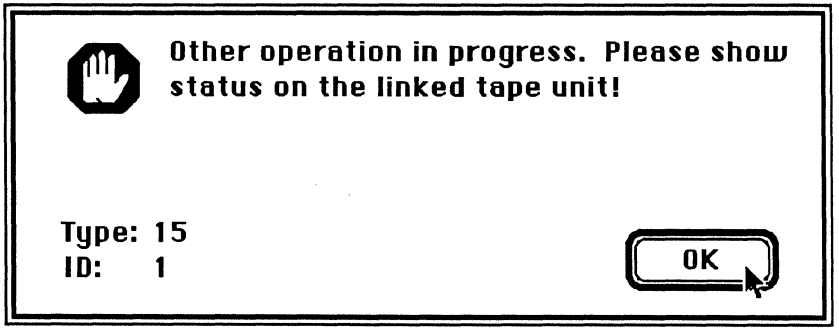


The information in the Backup Status dialog box is updated periodically while it is displayed.

Because the tape is active, you can perform only one of the following processes at a time:

- Backing up data
- Restoring data
- Creating a tape log
- Erasing a tape
- Showing a tape header

If you (or someone else with access to your tape unit server) try to initiate one of these processes when another is in progress, you will see this message:



Reading a Log File

Log files are generated whenever you select these commands:

Menu Item	Log Filename
Backup from...	BACK_LOG.1
Restore to...	REST_LOG.1
Create Tape Log	TAPE_LOG

Only one tape log is maintained, but up to five backup and restore logs can be kept. When a sixth log is generated, the oldest one is discarded, and each log is renumbered. For example:

Current Log Files	Next Log Files
BACK_LOG.5	Discarded
BACK_LOG.4	BACK_LOG.5
BACK_LOG.3	BACK_LOG.4
BACK_LOG.2	BACK_LOG.3
BACK_LOG.1	BACK_LOG.2

If you want to save a log file, give it a different name. If you keep archival tapes, maintaining tape logs makes future reference easy.

Log files contain various status messages concerning your backup and restore operations. Messages indicating a problem has occurred are preceded by two exclamation marks (!!). When reading a log file, you can easily search for the exclamation marks to determine if any problems have occurred. Explanations of these messages can be found in Appendix A: Error Messages.

To read a log file, use your favorite word processing application or text editor, and follow these steps:

1. **Choose and open the server with the tape unit in the 3+ Network Window.**

   Double-clicking opens the server, which, in turn, becomes the new name of the list of network objects. For help, see "Getting Ready" earlier in this chapter.

2. **Choose the 3PLUS Shared Folder, then click Link.**

   Look for the Shared Folder near the top of the list. For help, see Appendix C: Using the 3+ Network Window.

3. **Quit the 3+NetAccess application.**

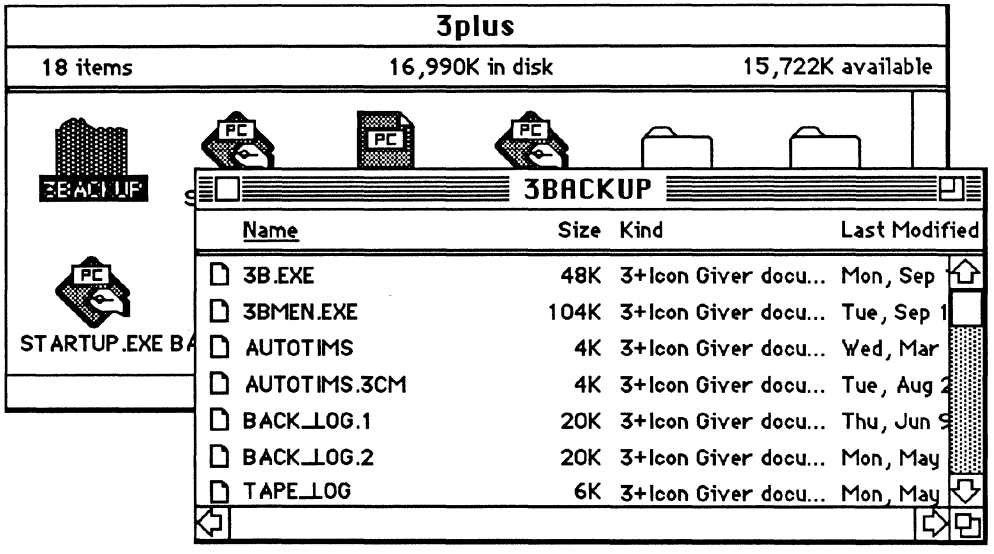
4. **Open your word processing or text editing application.**

5. **Open the log file in the 3BACKUP folder located in the 3PLUS Shared Folder.**

   a. Choose Open from the File menu, then click Drive repeatedly until you reach the 3PLUS Shared Folder.

   b. Open the 3BACKUP folder.

   c. Open the log file.



Now you can read the log file on your screen, and, if desired, make a printed copy.

6. **To save the log file, rename it and save it in a different location.**

   Each time you create a new log, previous logs are renamed or discarded. Renaming lets you maintain records indefinitely.

Chapter 6: 3+Mail

3+Mail allows users on the network to communicate quickly and easily. Once you have set up 3+Mail and gotten users started, very little maintenance is required.

Procedures for setting up and administering 3+Mail are presented in this chapter, including information about installing the 3+Mail Minder desk accessory on user startup diskettes.

Setting Up 3+Mail

To set up 3+Mail, you need to:

- Install the 3+Mail service on a network server.
- Copy the 3+Mail application to the MACAPPS folder (optional).
- Add the 3+Mail Minder desk accessory to the System Folder of user startup diskettes and System Folders on the network (for users who want to use 3+Mail Minder).

Installing 3+Mail on a Server

3+Mail must be installed on at least one network server before users can access it. To install 3+Mail, follow the instructions in the *3+ Installation and Setup Guide* for installing individual services.

NOTE: If your network already has 3+Mail installed on a server, there is no need to install it again. The same version of 3+Mail server software is used by both Macintosh and PC netstation users.

Copying 3+Mail to MACAPPS

A MACAPPS folder is optional on your network. It is a folders, created by the server-user, that can be accessed by all users on the network and serves as a central location for applications and information that can be shared by all users.

Placing a shared application, such as 3+Mail, into a central MACAPPS folder allows you to upgrade applications easily. If each user maintains a separate copy of each application, changes and upgrades can be time-consuming.

If you do not want to use a central MACAPPS folder, skip this section and give each user a copy of 3+Mail on a diskette. If you have not previously created a MACAPPS folder and want to do so, follow the instructions in "Sharing a Folder as Server User" in Chapter 2 before proceeding with the steps below.

1. **Log in as Admin or as a user with Admin capabilities.**

   If you do not know how to do this, see "Logging In as Admin" in Chapter 2.

2. **From the 3+ Network Window, select the server where MACAPPS was created and link to the Shared Folder named MACADMIN.**

   For information on selecting and linking items in the 3+Network Window, see Appendix C.

   Remember, the MACAPPS folder has two Shared Folder names, MACAPPS and MACADMIN. Linking to the Shared Folder name MACADMIN gives you Read/Write/Create access rights.

3. **Close the 3+ Network Window.**

   If you are using the Chooser, click Done. If you are using the 3+NetAccess application, choose Quit from the File menu.

   NOTE: When using MultiFinder and the 3+NetAccess application, it is not necessary to quit the application.

4. **Insert the *3+Mail for Macintosh* diskette.**

5. **From the Finder, copy the 3+Mail application to the Shared Folder MACADMIN.**

   The 3+Mail application is now available to all users who link to the server's MACAPPS Shared Folder.

Adding 3+Mail Minder to Startup Disks

3+Mail Minder is a desk accessory available for users. It checks the 3+Mail server periodically and notifies the user of pending mail. Users can specify how often 3+Mail Minder checks for mail and what form of notification is given. For complete information on user-specified options, see the *3+Mail for Macintosh User Guide*.

NOTE: These instructions assume you have already created a 3+ for Macintosh startup diskette or installed the 3+ for Macintosh user software on a hard disk following instructions in the *3+ Installation and Setup Guide*. They also assume that you have a Macintosh with two disk drives or a hard disk.

1. **If you are adding 3+Mail Minder to a user's 3+ for Macintosh startup diskette, insert the startup diskette into one of the disk drives.**

   If you are adding 3+Mail Minder to a hard disk, skip this step.

2. **Insert the *3+Mail for Macintosh* diskette into the other disk drive.**

3. **Copy the file Mail Minder from the *3+Mail for Macintosh* diskette to the System Folder of the disk you are upgrading.**

4. **Use the Font/DA Mover to install the Mail Minder DA from the *3+Mail for Macintosh* diskette into the System file on the disk you are upgrading.**

   The startup disk now contains the 3+Mail Minder desk accessory. To use 3+Mail Minder, restart the Macintosh using the upgraded startup disk. For complete instructions on using 3+Mail Minder, see the *3+Mail for Macintosh User Guide*. For information on using the Font/DA Mover application, see the documentation accompanying the application.

5. **If the user has a System Folder on the network, install the Mail Minder DA in that System file as well.**

   NOTE: If you install the Mail Minder DA in the System file of a network System Folder, make sure to also copy the file Mail Minder to the network System Folder.

Administering 3+Mail

Administering 3+Mail involves:

- Assigning a Mail server to existing users
- Adding and deleting groups for use as distribution lists (see Chapter 3 for information)
- Adding and deleting members to groups (see Chapter 3 for information)
- Checking a Mail server's status
- Viewing and deleting outgoing mail
- Viewing and deleting undelivered mail

All 3+Mail administrative tasks are available *only* to the Admin user or to any user with Admin capabilities.

Assigning a Mail Server to Existing Users

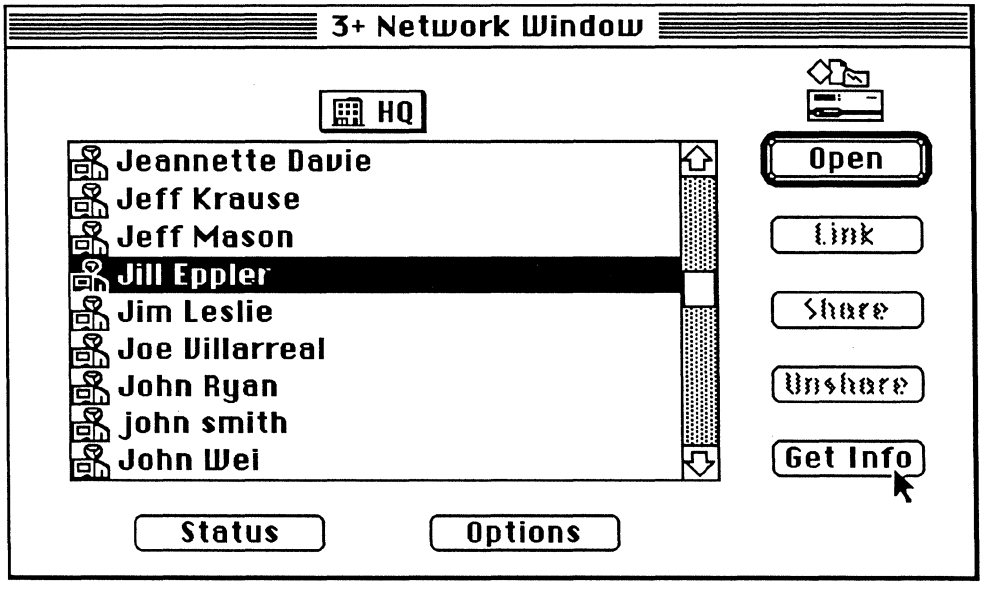
Follow these steps to assign a Mail server to existing users.

1. **Log in as Admin and open the 3+NetAccess application.**

   If you do not know how to do this, see "Logging In as Admin" in Chapter 2.

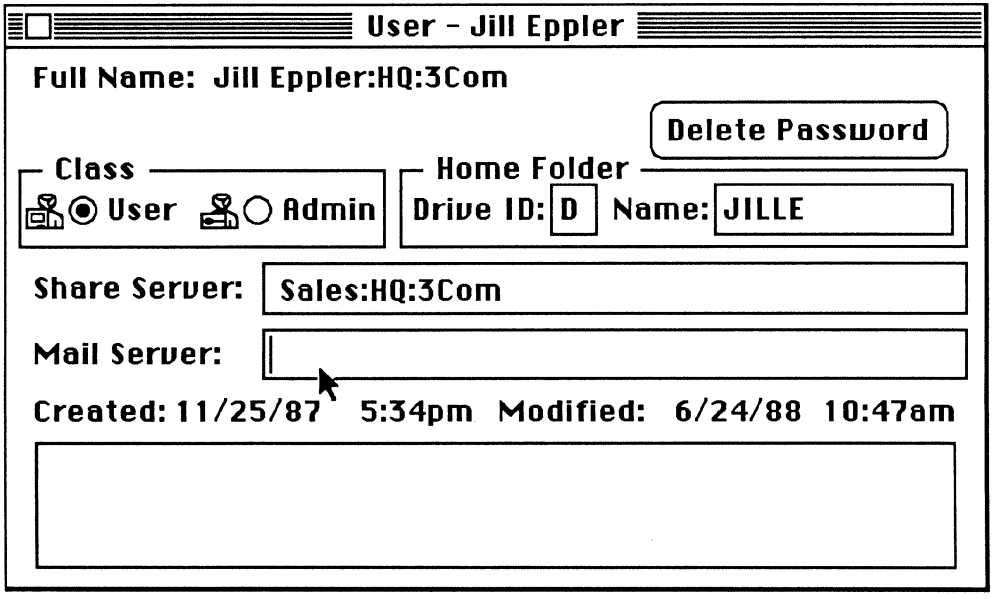
2. **In the 3+ Network Window, select the user for whom you want to assign a 3+Mail server.**

   For information on selecting items in the 3+ Network Window, see Appendix C.



3. **Click Get Info.**

   The user Get Info window appears on the screen.



4. **In the Mail Server text box, type the three-part name of the Mail server to which the user will be assigned.**

5. **Close the Get Info window.**

   You can close the window by clicking the close box in the upper-left corner or by choosing Close from the File menu. A confirmation box is displayed.

6. **Click Yes to save the changes.**

   The user's Name service information is modified to include the new Mail server assignment.

   To ignore the changes, click No. To make additional changes to information in the Get Info window, click Cancel.

7. **Repeat these steps for each existing user you want to assign to a Mail server.**

Changing a User's Mail Server

To move a user from one Mail server to another, follow these steps:

1. **Log in as Admin and open the 3+NetAccess application.**

   If you do not know how to do this, see "Logging In as Admin" in Chapter 2.

2. **In the 3+ Network Window, select the 3+Mail server to which the user is assigned.**

   For information on selecting items in the 3+ Network Window, see Appendix C.

   If you do not know what Mail server the user is assigned to, select the user in the 3+ Network Window and click Get Info.

3. **Verify that there are no messages waiting to be delivered to the user.**

   To check undelivered messages, choose Show Undelivered Mail from the Mail menu and look for the user's name in the list. If any messages are waiting to be delivered, ask the user to log in and retrieve them or delete them following instructions in "Viewing and Deleting Undelivered Mail" later in this chapter.

4. **Select the user in the 3+ Network Window and click Get Info.**

5. **Type the name of the new Mail server in the Mail Server text box.**

6. **Close the user Get Info dialog box and click Yes to verify the changes.**

Deleting a User from a Mail Server

To delete a user from a Mail server, follow these steps:

1. **Log in as Admin and open the 3+NetAccess application.**

   If you do not know how to do this, see "Logging In as Admin" in Chapter 2.

2. **In the 3+ Network Window, select the 3+Mail server to which the user is assigned.**

   For information on selecting items in the 3+ Network Window, see Appendix C.

   If you do not know to what Mail server the user is assigned, select the user in the 3+ Network Window and click Get Info.

3. **Verify that there are no messages waiting to be delivered to the user.**

   To check undelivered messages, choose Show Undelivered Mail from the Mail menu and look for the user's name in the list. If any messages are waiting to be delivered, ask the user to log in and retrieve them.

4. **Select the user in the 3+ Network Window and click Get Info.**

5. **Delete the Mail server's name in the Mail Server text box.**

6. **Close the user Get Info dialog box and click Yes to verify the changes.**

Checking a Mail Server's Status

Viewing the status of a Mail server shows you a list of the current default values for that server and the number of people currently using 3+Mail. To view the status, follow these steps:

1. **Log in as Admin and open the 3+NetAccess application.**

   If you do not know how to do this, see "Logging In as Admin" in Chapter 2.

2. **In the 3+ Network Window, select the 3+Mail server on which you want to view the status.**

   For information on selecting items in the 3+ Network Window, see Appendix C.

3. **Choose Show Mail Server Status from the Mail menu.**

A dialog box similar to the one below is displayed.

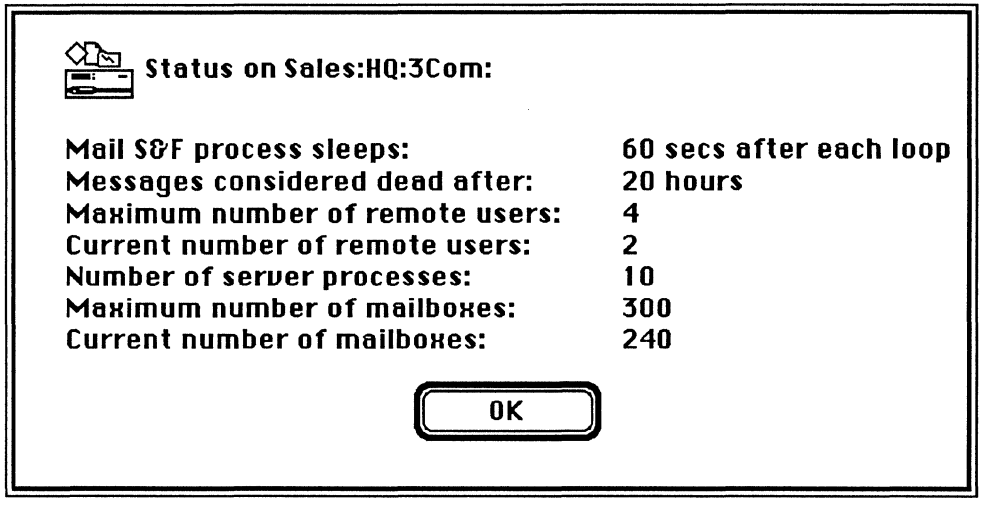

Status on Sales:HQ:3Com:
Mail S&F process sleeps: 60 secs after each loop
Messages considered dead after: 20 hours
Maximum number of remote users: 4
Current number of remote users: 2
Number of server processes: 10
Maximum number of mailboxes: 300
Current number of mailboxes: 240
OK

Table 2-1 explains each of the status indicators shown in the status dialog box. In the 3+NetAccess application, you can view the status of the Mail server, but you cannot change it. To change any of these parameters, refer to the *3+ Tuning Guide*.

Table 6-1. Mail Status Items

Status Indicator	Meaning
Mail S&F (store & forward) process sleeps	The number of seconds that the Mail server will wait (sleep) before forwarding any mail it has collected for other Mail servers on the same network.
Messages considered dead after	The number of hours that the server will keep trying to forward mail to other servers (local and remote) before the mail is considered undeliverable. Undelivered mail is returned to the sender with a message indicating that it was not delivered.
Maximum number of remote users	The maximum number of remote users who can access this Mail server at any one time. Macintosh users accessing the server via LocalTalk are considered remote users.
Current number of remote users	The current number of remote users accessing this Mail server. Macintosh users accessing the server via LocalTalk are considered remote users.
Number of server processes	The maximum number of simultaneous Mail server processes that can be handled by this server. A Mail server process is activated only while a user is actually sending or receiving mail messages. Each process supports a single user either sending mail to, or retrieving mail from, the server.
Maximum number of mail boxes	The maximum number of users who can be assigned to this Mail server. This parameter is ignored if the server has the 5-user version of 3+Mail installed.
Current number of mail boxes	The current number of users assigned to this Mail server.

Viewing and Deleting Outgoing Mail

You can use the 3+NetAccess application to check the number of mail messages waiting to be sent from one server to another. When mail is waiting to be sent to another server, it is called outgoing mail. Mail can be sent to servers on the same network or on a different network.

Viewing Outgoing Mail

1. **Log in as Admin and open the 3+NetAccess application.**

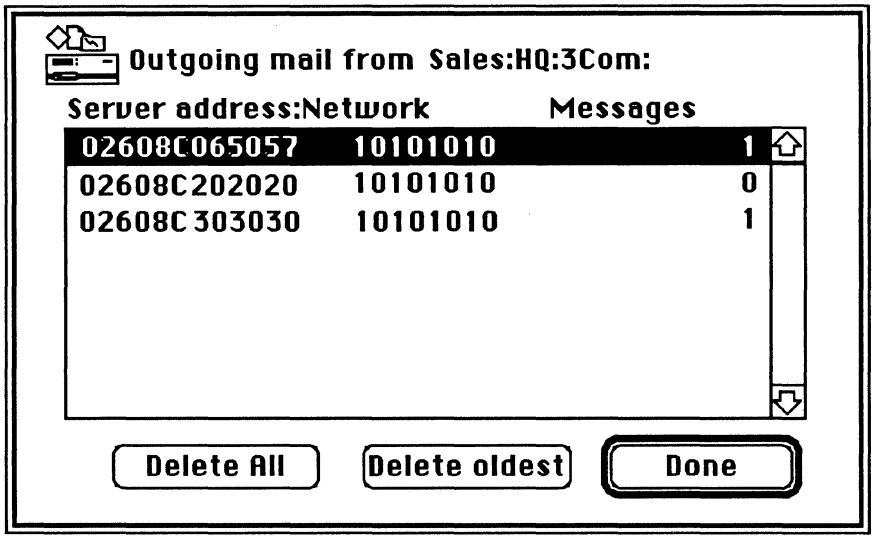
   If you do not know how to do this, see "Logging In as Admin" in Chapter 2.

2. **In the 3+ Network Window, select the 3+Mail server on which you want to view outgoing mail.**

   For information on selecting items in the 3+ Network Window, see Appendix C.

3. **Choose Show Outgoing Mail from the Mail menu.**

A dialog box similar to the one below appears; it shows the server address, the network number, and the number of messages waiting to be sent.



The server address is the Ethernet address of the Mail server that receives the messages. This address is unique to the server and identifies it to the network.

The network number is the number assigned to the Name service on the Mail server's network.

The messages indicates the number of messages waiting to be sent to the Mail server indicated by the server address.

Deleting Outgoing Mail

You can delete all outgoing mail or the oldest outgoing message destined for a specific server. You may want to do this if a Mail server will be out of service for a period of time.

When you view outgoing mail on a server, the destination server is indicated only by its Ethernet address and network number. To determine a server's Ethernet address, select the server in the 3+Network Window and click Get Info.

- To delete all mail waiting to be sent to a server, select the server's Ethernet address and click Delete All. Verify that the network and server numbers are correct and click OK.

- To delete only the oldest message waiting to be sent to a server, select the server's Ethernet address and click Delete oldest. Verify that the network and server numbers are correct and click OK.

When you delete mail in this way, only messages being sent to the specified server are deleted. Mail that the server has received and not yet delivered is not affected.

Viewing and Deleting Undelivered Mail

There are two types of undelivered mail:

- In the 3+NetAccess application, undelivered mail is mail that has been received by the server, but not retrieved by users.

- For a user, undelivered mail indicates that the Mail server was unable to locate the recipient's name in the network's Name service. The user who originally sent the message is then given the opportunity to correct the message header and send the message again.

These procedures refer to the first type: mail that has been received by the server, but not retrieved by users.

1. **Log in as Admin and open the 3+NetAccess application.**

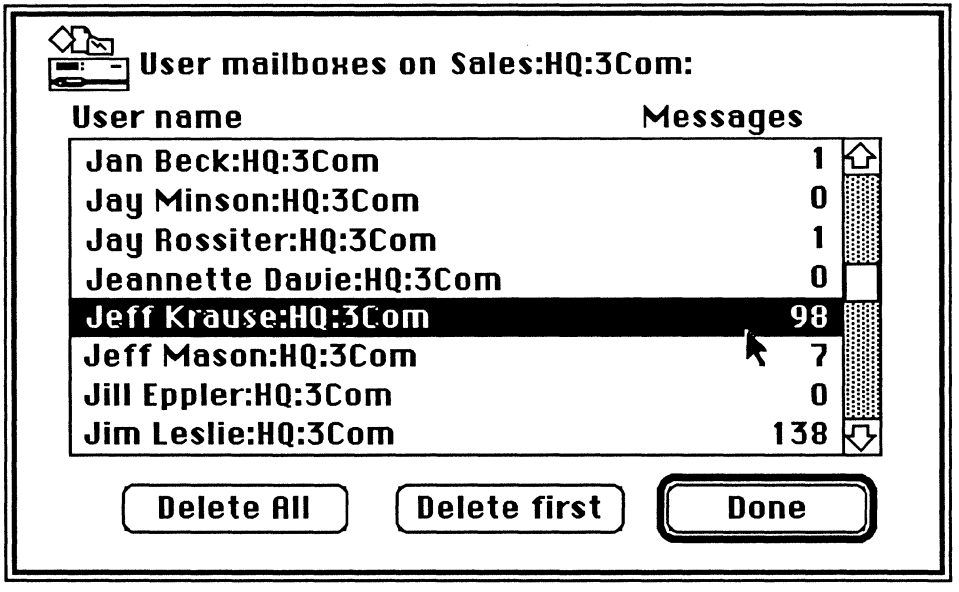
   If you do not know how to do this, see "Logging In as Admin" in Chapter 2.

2. **In the 3+ Network Window, select the 3+Mail server on which you want to view undelivered mail.**

   For information on selecting items in the 3+ Network Window, see Appendix C.

3. **Choose Show Undelivered Mail from the Mail menu.**

   A dialog box similar to the one below appears; it shows the user names and the number of messages waiting for each user.



Deleting All Undelivered Messages

If a user has left the company or changed locations, you can delete all messages waiting to be delivered to that user by selecting the user's name and clicking Delete All. Verify that you have selected the correct user's name and click OK. You must delete all messages waiting to be delivered to a user before you can delete the user from the network.

Deleting the First Undelivered Message

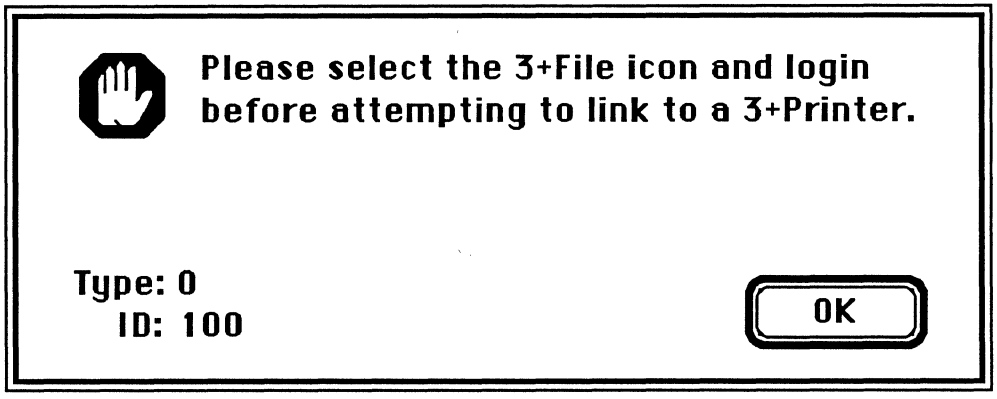
You can also delete only the first message waiting to be delivered to a particular user. This may be necessary if a message is undeliverable because of improper formatting. It may also be necessary when a message with a particularly large attachment is not deliverable because of lack of disk space, thus blocking the delivery of subsequent mail and causing an error condition for that user. To delete the first waiting message, select the user's name in the undelivered mail window and click Delete first. Verify that you selected the correct user's name, then click OK.

When you delete mail in this manner, only the first message waiting to be delivered to the specified user is deleted. Mail that the user has sent or already retrieved is not affected, and the user's mailbox is not deleted.

Appendix A: Error Messages

Examples of the basic 3+Share and 3+Name software messages are listed alphabetically in this appendix. Each listed message provides an explanation and a recommended recovery action. All references to Share server or Name server refer to the network server containing 3+Share and 3+Name services, respectively.

Also included in this appendix are messages that may appear in log files after performing a 3+Backup operation. These messages are preceded by two exclamation marks (!!) and are included in the alphabetical listing of other 3+ messages.



Some messages are referenced by a network error type number and a network error ID number. The network error type number represents the different categories of errors within the 3+ services; for example, type 0 are Name service errors, type 1 are DOS errors, type 2 are server related errors, and type 3 are hardware errors. The network error ID number is a means of identifying or numbering the incidence of errors within a specific category type of error.

At the end of this appendix are all error messages cross-referenced by their type and ID numbers (see Table A-1).

3+ for Macintosh Messages

The following list of the 3+ for Macintosh messages is in alphabetical order. Included with each message is a brief explanation (meaning) of the message and a course of action you can take to remedy the situation. Where applicable, the type and ID number of a message are given. If you know the type and ID number, but not the text of a message, see Table A-1, "Type and ID Cross-Reference" at the end of this chapter. Messages preceded by two exclamation marks (!!) are log file messages generated by 3+Backup operations.

3+NetAccess is currently open. You must quit 3+NetAccess to use 3+Print.

Meaning You are running the 3+NetAccess application in MultiFinder and have chosen 3+Print from the Chooser.

Action Either access the desired Print service functions from within the 3+NetAccess application, or close the 3+NetAccess application and choose 3+Print from the Chooser.

3+Share software has used up its memory; retry. If problem recurs, restart your Macintosh.
Type: 6 ID: 9

Meaning 3+Share for the Macintosh has run out of memory.

Action Retry the operation. If the message persists, restart your Macintosh netstation.

An administrator has disabled new links to this printer.
Type: 6 ID: 6

Meaning The network administrator has blocked all users from linking to this printer by disabling any new links to it. The printer is either being modified or needs repairs.

Action Link to another printer, or allow users to link to the printer again by enabling printer links. Refer to "Enabling or Disabling Printer Links" in Chapter 4 for instructions.

A serious error has occurred during 3+ startup. Use the Chooser and resave your Startup.
Type: 21 ID: 20, 21, 22

Meaning There is a problem in the connection to the network. The Macintosh netstation may be disconnected, or there may be a disconnection somewhere in the network, or you may have started up using a startup diskette in a Macintosh netstation that is not connected to the correct domain and organization.

Action Make sure the Macintosh netstation is connected to the network. Then make sure the Macintosh is connected to the same network previously used. Restart the Macintosh netstation, pressing the mouse button when the 3+File icon appears in the Welcome to Macintosh box. Continue holding down the mouse button until the desktop appears with the startup diskette icon in the corner, then release the mouse button. Log in through the Chooser, as if you were logging in for the first time. Remake your startup links and save them for startup in the User Status dialog box. If you are unable to remake the links on the first try, log out using Shut Down from the Special menu, log in, and try again.

Can not add user to Share server. Add Share server entry to Name service anyway?

This is an informational message displayed following an error message. This serves to prompt the administrator to act.

Meaning The Share server did not respond when requested to add a user. You can choose to add the Share server entry for the user to the Name service.

Action Click Yes if one of the following conditions applies:

- You are reestablishing all the users from a domain that was accidentally deleted from the Name service.
- You are adding all users back to the Name service after the server failed.
- You deleted the user earlier, but the Share server did not respond. When asked if you wanted to delete the user anyway, you clicked Yes, causing the user to be deleted from the Name service, but leaving the user's Home Folder on the Share server. In order to delete the user's Home Folder, you are adding the user to the Name service so that a complete delete operation can be performed.

Otherwise, click No, make sure the Share server is in operation, and try the procedure again.

Cannot delete user from the Name service. Delete from Share service anyway?

This is an informational message displayed following an error message. This serves to prompt the administrator to act.

Meaning The Name server did not respond when requested to delete a user.

Action Click No. Make sure that the Name server is in operation and that the cable connections are not broken. Try deleting the user again.

Cannot delete user from Share service. Delete from Name service anyway?

This is an informational message displayed following an error message. This serves to prompt the administrator to act.

Meaning An error has occurred with the Share server. If this message appears after one that reads "user has resources," the user you are trying to delete still has files or Shared Folders on the Share server.

Action Click Yes *only* if you have seen the "user has resources" message, and you want to reenter or move the user and allow access to these files. If this is not the case, click No. Check the Share server and restart it if necessary, or delete the user's files. Then try deleting the user again.

Cannot link printer *<additional message>*.

Meaning The 3+ for Macintosh software was unable to link to the printer during startup.

Action Look up the additional message and follow the action. Two possible additional messages are: "Server not responding" and "Admin has disabled links to that printer."

Cannot save Clipboard contents.

Meaning This message may occur when using 3+Mail when the contents of the Clipboard have been lost due to lack of memory.

Action If using MultiFinder, close one or more applications to free memory and try again. Or, use the application in a larger memory partition.

Cannot write Clipboard to disk—please make room in your System Folder.

Meaning 3+Mail cannot write the contents of the Clipboard to the Clipboard file in the System Folder because the System Folder's disk is too full.

Action If you want to save the Clipboard to allow pasting of information into another application, delete some files from the disk or from the Shared Folder containing your System Folder.

Domain is foreign for alias's object.
Type: 0 ID: 7

Meaning An alias in the Name service points to an object listed in a remote domain, rather than on your Name service domain.

Action Delete this alias or add an entry for this remote domain on your Name service. See "Deleting an Alias, Group, Member, or Server" or "Adding Domains and Organizations" in Chapter 3 for instructions.

Domain is remote.
Type: 0 ID: 5

Meaning The domain specified exists on a remote network.

Action Add this remote domain into your Name service. See "Adding Domains and Organizations" in Chapter 3 for instructions.

!!File access error. File in use.

Meaning: This message may appear in the backup log file (BACK_LOG.1). One component (fork) of a Macintosh file was not correctly backed up because it was open. The name of the file affected is shown on the line preceding this message.

Action: Either repeat the backup operation in off-line mode using a PC netstation, or unlink all users from the server and repeat the backup operation in on-line mode using a PC or Macintosh netstation. Check the backup log file when completed to ensure that all files were backed up correctly.

Hardware error on Share server.
Type: 3 ID: UNKNOWN

Meaning A serious hardware problem exists on your Share server.

Action Contact your network reseller for assistance. (See Appendix B for information.)

Home Folder already exists.
Type: 4 ID: 11

Meaning A Home Folder by this name already exists on the Share server.

Action You must specify a unique name for the Home Folder. Two folders with the same name cannot exist on the same Share server.

Illegal or blank entry in field.

This is an informational message displayed following an error message. This serves to prompt the administrator to act.

Meaning You have entered an invalid entry in a text field, or have left a required field blank.

Action Click OK, then enter the correct information in the field where the cursor appears.

Incorrect password.
Type: 0 ID: 37

Meaning The password entered is incorrect.

Action If this occurs when a user is logging in, delete the user's password, then have the user log in and create a new password. See "Deleting a User Password" in Chapter 3 for instructions. If this occurs when attempting to link to a Shared Folder, make sure you have entered the password assigned by the owner of the folder. If necessary, have the user specify a new password using the Get Info window, or unshare the folder and reshare it, specifying a new password.

Information about a Name service object is missing.
Type: 0 ID: 16, 25

Meaning The Ethernet address of a server, capability class of a user, or network number of a domain is missing.

Action Use the 3+ Network Window to select the desired object, and click Get Info. Enter the missing information.

Internal DOS error.
Type: 1 ID: UNKNOWN

Meaning There is a serious problem with the server.

Action Contact your 3Com reseller for assistance.

!!Internal error 10, rc=17

Meaning: A serious error has occurred during a backup operation. This message may appear in the backup log (BACK_LOG.1) after the message "See backup log" has been displayed on the server's LCD.

Action: Contact your 3Com reseller for assistance.

Invalid domain.
Type: 0 ID: 46

Meaning The entry for this domain is too long or contains invalid characters.

Action Make sure you have typed the entry correctly. Be sure to follow the guidelines in "Naming Guidelines" in Chapter 3.

Invalid name.
Type: 0 ID: 47

Meaning The name entry is too long or contains invalid characters.

Action Make sure you have typed the entry correctly. Be sure to follow the guidelines in "Naming Guidelines" in Chapter 3.

Invalid organization.
Type: 0 ID: 45

Meaning The entry for this organization is too long or contains invalid characters.

Action Make sure you have typed the entry correctly. Be sure to follow the guidelines in "Naming Guidelines" in Chapter 3.

!!Macintosh Service Support File inaccessible

Meaning This message may appear in the backup log file (BACK_LOG.1). The Macintosh file database for the folder's directory was not backed up correctly.

Action Attempt to access the folder from a Macintosh netstation to make sure the directory information is accessible. Make sure no one is accessing the folder and perform the backup operation again.

Mail server error.
Type: 11 ID: UNKNOWN

Meaning A serious Mail server error has occurred.

Action Contact your 3Com reseller for assistance.

Mail server has reached its maximum number of user mailboxes.
Type: 11 ID: 14

Meaning The maximum number of users originally configured for your Mail service has been reached. This configuration was set during installation of your network.

Action If the 5-user version of Mail has been installed, install another copy to allow more users. See the *3+ Installation and Setup Guide* for installation instructions. Or, add the user to another 3+Mail server. If the unlimited-user version of Mail has been installed, increase the maximum number of users allowed in the Mail service. See the *3+ Tuning Guide* for information.

Maximum number of domains already in Name service. Configure 3+Name service to allow more domains.
Type: 0 ID: 41

Meaning The maximum number of domains originally configured for your Name service has been reached. This configuration was set during installation of your network.

Action Increase the maximum number of domains allowed in the Name service. See the *3+ Tuning Guide* for information.

Maximum number of users already on Share server. Configure 3+Share service on Share server to allow more users.
Type: 4 ID: 8

Meaning The maximum number of users originally configured for your Share service has been reached. This configuration was set during installation of your network.

Action Add the user to a different Share server or increase the maximum number of users allowed on the server. See the *3+ Tuning Guide* for information.

Name already exists in Name service.
Type: 0 ID: 13

Meaning The name you specified already exists in the Name service.

Action Make sure the name is spelled correctly. Add a new, unique name entry for this object following the "Naming Guidelines" in Chapter 3.

Name not found in Name service.
Type: 0 ID: 36

Meaning The name of the object you have selected in the 3+ Network Window cannot be found in Name service.

Action Make sure the name is spelled correctly and that you are looking at the correct domain. If you are using the 3+Network Window, view the next higher level of the network, then return to the view you had before. If the object you selected is no longer in view, it was deleted some time after you first brought it into view, but before you selected it. If you are using someone else's startup disk or a copy of someone else's startup disk, remove the 3+Prep file from the System Folder and restart the Macintosh. If the network object has not yet been added to the Name service, add it following the appropriate instructions in Chapter 3 of this guide.

Name server not responding.

Meaning The Name server is shut down, disconnected from the network, or busy with requests, and is unable to respond to your netstation's request. Or, there is a problem with the network cabling.

Action Check the cabling connection to the Macintosh netstation. Make sure all cables are properly connected. If you are using someone else's startup disk or a copy of someone else's startup disk, remove the 3+Prep file from the System Folder and restart the Macintosh. Make sure that the Name server is in operation and connected to the network, and that no break exists in the network cabling. If the message occurs frequently, move one or more 3+ services to a different server. If you are using a PC server as the network's Name server and this message occurs frequently, try moving the Name service to a 3Com server or higher performance PC server.

Name service error.
Type: 0 ID: UNKNOWN

Meaning A serious Name service error has occurred.

Action Contact your 3Com reseller for assistance.

Name service has no more available space.
Type: 0 ID: 14

Meaning The Name service has no more available disk space.

Action Delete some items from the Name service using the appropriate procedures in Chapter 3. Refer to "Managing Storage Space" in Chapter 2 for methods of creating disk space.

No such domain.
Type: 0 ID: 3

Meaning This domain entry does not exist within the Name service.

Action Make sure the domain exists in the Name service by moving through the 3+ Network Window to display the available domains. If you do not know how to do this, see Appendix C. If necessary, create the domain by following instructions in "Adding Domains and Organizations" in Chapter 3.

No such name in Name service.
Type: 0 ID: 4

Meaning This name entry does not exist within the Name service.

Action Make sure the name exists in the Name service by moving through the 3+ Network Window to display the appropriate network objects. If you do not know how to do this, see Appendix C. If necessary, create the network object by following the appropriate instructions in Chapter 3.

No such organization.
Type: 0 ID: 2

Meaning This organization entry does not exist within the Name service.

Action Check your typing for errors. Make sure the organization exists in the Name service by moving through the 3+ Network Window to display all available organizations. If you do not know how to do this, see Appendix C. If necessary, create this organization in the Name service. See "Adding Domains and Organizations" in Chapter 3 for instructions.

Not enough space for member in the group.
Type: 0 ID: 34

Meaning The server does not have enough disk space to add this member to the group.

Action Delete some items from the Name service using the appropriate procedures in Chapter 3. Or make space available on the server's affected partition. Refer to Chapter 2 for methods of creating disk space.

Not enough space on Share server.
Type: 4 ID: 9

Meaning The Share server does not have sufficient disk space to add another user or to create another sharename at this time.

Action Follow the "Reclaiming Disk Space" guidelines in Chapter 2. If there is still insufficient space, begin deleting unnecessary files and/or folders, and whatever network objects (users, printers, servers) are possible from the Share server. Consider moving users and applications to another Share server with more available space or adding disk space to the server.

One or more characters you tried to paste are not allowed in this field.

This is an informational message displayed following an error message. This serves to prompt the administrator to act.

Meaning You have tried to paste illegal characters into a text field after cutting or copying them from another file.

Action Make sure that the text you cut or copied contains only legal characters for the field. Or, type the information directly into the field.

Print queue is empty.
Type: 4 ID: 39

Meaning You are trying to move or modify a print job that has already left the queue.

Action The job has already been deleted or printed, but the queue has not yet been updated to reflect this fact. Close the printer status dialog box and reopen it. The job should no longer be listed.

server:domain:organization **is not responding. Retrying...**

Meaning The server is not responding to requests. The 3+ software will continue trying to establish communication with the server unless you cancel by pressing Command-. (period).

Action Do not cancel the retries until at least one minute has elapsed. The server may be temporarily busy with other network requests; it will respond to your netstation's request shortly. If the message remains on the screen, check to see if the server is still operating.

CAUTION: If you cancel the operation by pressing Command-. (period), all connections to the indicated server are broken. If you cancel, restart your Macintosh and log in before continuing work.

Server is not responding.

Meaning If this message appears frequently when you try to retrieve or send mail, the number of remote processes for 3+Mail needs to be increased. Macintosh netstations connected to the server via LocalTalk are considered remote netstations.

Action Increase the number of remote processes for 3+Mail to four (4), or to the maximum number allowed by your server's memory, whichever is less. For information on increasing the number of remote processes for 3+Mail, see the *3+ Tuning Guide*.

Server is not responding. Wait 2 minutes and retry, or restart your Macintosh netstation.
Type: 5 ID: 5

Meaning The server is not responding to network requests.

Action It the message recurs after waiting and retrying, check your LocalTalk connection and restart. If still unsuccessful, make sure the server is in operation. Contact your 3Com reseller if the problem persists.

Server is not responding. Wait 2 minutes and retry, or see your administrator.
Type: 5 ID: -30010

Meaning The server is not responding to the user's operation or request because too many users are using the shared resources, or the services are not operating properly.

Action Retry the operation from the Macintosh after waiting 2 minutes. If still unsuccessful, restart the Macintosh, log in, and try the operation again. Make sure the server is in operation and that the cable connections are not broken. Contact your 3Com reseller if the problem persists.

Server refused to complete operation. Restart your Macintosh, and try again.
Type: 5 ID: -30012

Meaning The server will not complete the user's operation.

Action Restart your Macintosh, and retry the operation again. If the problem persists, check with your 3Com reseller .

Shared Folder or printer name not found on Share server. Close and reopen the 3+ Network Window.
Type: 4 ID: 27

Meaning The object you are trying to modify or unshare is being deleted.

Action Check the 3+ Network Window to see if the object is still listed. If it is still listed, either close the window and open it again or move to a different level (domain, organization, etc.) to refresh the display.

The character you typed is not allowed in this field.

This is an informational message displayed following an error message. This serves to prompt the administrator to act.

Meaning You have attempted to type an illegal character into a text field.

Action Enter only acceptable (legal) characters into the field (see "Naming Guidelines" in Chapter 3).

The domain you attempted to add already exists in the organization.
Type: 0 ID: 40

Meaning A domain with the name you specified already exists in this organization.

Action Each domain in the organization must have a unique name. Check the spelling and try again.

The drive you specified does not exist on the server. Share server Get Info will display existing drives.
Type: 4 ID: 7

Meaning The drive you specified when adding a user does not exist on the Share server you selected.

Action Select the Share server in the 3+ Network Window, and click Get Info. Make a note of the drives available, then try adding the user again.

The object to which this alias refers is itself an alias. Have administrator delete the alias.
Type: 0 ID: 9

Meaning An alias refers to another alias in the Name service.

Action Delete the alias. See "Deleting an Alias, Group, Member, or Server" in Chapter 3 for instructions.

The object to which this alias refers does not exist in the Name service. Have administrator delete the alias.
Type: 0 ID: 6, 8

Meaning An alias in your Name service points to an object (or name) that is no longer listed in your Name service.

Action Delete the alias. See "Deleting an Alias, Group, Member, or Server" in Chapter 3 for instructions.

The print job was deleted, or the printer finished printing it before your action took effect.
Type: 4 ID: 34

Meaning Between the time you took action on the selected job and the time the queue window was updated, the job was deleted or the printer finished printing it, and your action could not take effect.

Action The queue window is updated approximately every 12 seconds. If deleting a job, users should wait at least 5 seconds before the window updates.

The print queue is full.

Meaning The maximum number of print queue entries has been reached.

Action Click 3+Print in the Chooser and look at the print queue, or look at the queue using the 3+NetAccess application. When one or more print jobs leaves the queue, print the document again. If the message appears frequently, see the *3+ Tuning Guide* for information on increasing the maximum print queue entries allowed in the 3+Share Print service.

The print server's disk is out of space.

Meaning Drive C: on the 3+Share server to which the printer is attached is full.

Action Make space available on drive C: by removing unnecessary files in one or more user's Home Folders, or move one or more user's Home Folders to a different partition or server. If you have created a MACAPPS folder on drive C:, you can move it to another partition. The 3PLUS folder can also be moved to another partition.

There is not enough memory to add this folder to your desktop.
Type: 10 ID: 6

Meaning Your Macintosh netstation does not have enough free memory to add the folder you have linked to the desktop.

Action Quit the application in which you are currently working, and/or reduce the amount of memory in your RAM cache in the Control Panel.

The selected object has become unlinked. Try again. If error recurs, see your administrator.
Type: 2 ID: 5

Meaning The network object you linked to has become unlinked. Either you have done a forced unlink of the user or a network problem has occurred.

Action Link to the object again. If problems persist, check the network cabling and make sure the server is in operation.

The Shared Folder name or printer name already exists on the server. Assign a different name.
Type: 4 ID: 20

Meaning You have tried to share a folder or printer with a name that someone else has already used.

Action Assign a different name to the Shared Folder or printer.

The Share server has reached its maximum number of shared objects. Ask your administrator to configure 3+Share service to allow more sharenames.
Type: 4 ID: 40

Meaning The maximum number of Shared Folders, shared printers, or network users has been created on the Share server.

Action Create the network object on a different server, or adjust the Share service parameters. See the *3+ Tuning Guide* for information on adjusting parameters.

The user logged out while you were attempting a forced unlink.
Type: 4 ID: 4

Meaning Before you could complete unlinking a network user, the user logged out.

Action No action is required.

The user's mailbox on the Mail server is not empty.
Type: 11 ID: 13

Meaning The user you are attempting to delete from the Mail server has messages waiting to be delivered.

Action Have the user retrieve the mail messages. Or, use the 3+NetAccess application to delete undelivered mail messages for the user. See "Viewing and Deleting Undelivered Mail" in Chapter 6 for instructions. When the user has retrieved all messages, or you have deleted the messages, try deleting the user from the Mail server again.

The user or group you tried to add is already listed in the group.
Type: 0 ID: 33

Meaning You have attempted to add a member to a group using a name that already exists as a member of the group.

Action Each member of a group must have a unique name. Check the spelling of the entry you attempted to add.

Typing or pasting would make this field too long.

This is an informational message displayed following an error message. This serves to prompt the administrator to act.

Meaning You have tried to paste or enter data that is too long for the field.

Action Cut or copy a smaller section of information and try the paste operation again. Or, type the entry directly.

Unable to link Shared Folder or printer due to a Share server problem. Try again later.
Type: 2 ID: 1

Meaning Too many users are sharing network resources at this time, preventing you from linking to the Shared Folder or printer on the server.

Action Wait a few minutes and try again. If problem recurs, see the *3+ Tuning Guide* for information on adjusting the Share service parameters.

Unable to link to object on server because the server does not have Macintosh file service. See your administrator.
Type: 10 ID: 5

Meaning You have tried to link to an object on a server that does not have Macintosh file service installed on it. You cannot link to objects on this server.

Action Install Macintosh file service on the server, or avoid linking to any objects on it. See the *3+ Installation and Setup Guide* for information on installing Macintosh file service.

User already exists on Share server.
Type: 4 ID: 10

Meaning The user you are attempting to add already has a Home Folder on the Share server specified.

Action The user already exists. Make sure you have entered the correct user and Share server name.

User has Shared Folders, and therefore cannot be deleted. Log in as the user and unshare the Shared Folders.
Type: 4 ID: 15

Meaning The user you are attempting to delete has Shared Folders. A user cannot be deleted until all the user's Shared Folders are unshared.

Action If user is unavailable to unshare Shared Folders, log in as the user and unshare them. Once all the Shared Folders are unshared, the user can be deleted from the network. See "Deleting a User" in Chapter 3 for instructions.

User is not known on the Mail server.
Type: 11 ID: 7

Meaning This occurs when deleting a user from the Mail server, when the Mail server does not have a mailbox for that user.

Action The user's Name service entry should be updated to reflect the fact that the user does not have a mailbox on the Mail server.

User's Home Folder has files or folders in it, or user is linked to other Shared Folders. Have user empty Home Folder, then force unlink user from Share server.
Type: 4 ID: 16

Meaning You are attempting to delete a user from the Share server and the Home Folder is not empty, or the user is still linked to some sharename other than the Home Folder.

Action Request that the user empty the Home Folder, then perform a forced unlink. See "Unlinking a User" in Chapter 2 for instructions.

You are linked to too many objects.
Type: 6 ID: 14

Meaning You have linked to the maximum number of network objects (26) possible.

Action Unlink one of the network objects (such as a Shared Folder or printer) that you have linked. If this message reappears, unlink from another network object.

You are linked to too many servers. Unlink objects from one or more servers.
Type: 6 ID: 2

Meaning You are communicating with too many servers.

Action Unlink one of the network objects that you have linked. If this message reappears, unlink another network object from a different server.

You cannot delete a user who is linked to that user's Home Folder. Use the force unlink option in 3+NetAccess.
Type: 6 ID: 8

Meaning You are unable to delete a user that is still linked to that user's Home Folder.

Action Ask the user to log out, or follow the instructions in "Unlinking a User" in Chapter 2. Once the user is unlinked, you can delete that user from the network.

You cannot link to this Shared Folder. Check its access rights, and check to see if other users are linked to it.
Type: 2 ID: 4

Meaning You cannot link to this Shared Folder because it has Private access rights and does not have a password, or because another user is already linked to it.

Action Check whether another user is linked by using the Show Links command in the 3+NetAccess program. If no user is linked, ask the owner of this Shared Folder to change its access rights or assign it a password so you can link to it.

You cannot log out because you have switch launched. Restart your Macintosh.

Meaning You have switch launched to the Finder or MultiFinder on the network, are running the 3+NetAccess application, and have attempted to log out from within the 3+NetAccess application.

Action Restart your Macintosh.

You cannot share a folder that is not on your own Share server.
Type: 4 ID: 32

Meaning If a user has a sharename that is sharable, but another user on another Share server attempts to share the folder, that user is prevented from doing so by the software. You are able to create sharenames only for resources on your own Share server.

Action No action is required.

You cannot take this action because the print job or Shared Folder you selected is not yours.
Type: 4 ID: 26

Meaning You are unable to modify either the print job or Shared Folder because the ownership or rights to do this do not belong to you.

Action No action is required. As administrator, you can log in and modify the access rights using the appropriate procedure in Chapter 3 of this guide.

You cannot unshare a printer when there are jobs in the print queue. Have an administrator move the queue to another printer or delete the queue.
Type: 4 ID: 41

Meaning You are unable to unshare a printer because jobs in its print queue are waiting to print.

Action Login as the administrator and delete the print queue, or move it to another printer. Refer to "Manipulating the Print Queue" and "Moving a Print Queue" in Chapter 4.

You cannot unshare this Shared Folder or printer because another user is linked to it.
Type: 4 ID: 28

Meaning A user is linked to the Shared Folder or the printer that you tried to unshare, so you cannot unshare it.

Action Ask the user to unlink from the object in question, close and reopen the 3+ Network Window, find and select the object, and click Unshare. As administrator, you can force unlinks from printers or servers. See "Unlinking a User" in Chapter 2 for more information.

You have not typed a complete, correct path. Try again.
Type: 4 ID: 21

Meaning When you are a server-user and sharing a folder, you must specify a complete and correct DOS pathname.

Action Enter the correct DOS pathname. For example:

```
C:\MACAPPS
```

Your 3+ software needs minor repairs. Restart and try again.
Type: 6 ID: 1

Meaning Either the 3+Share file has not been installed on your Macintosh netstation, or the file is damaged.

Action Make sure LocalTalk is connected, then restart the Macintosh netstation using a 3+ startup diskette. If this message reappears, reinstall the 3+ for Macintosh user software onto the startup disk.

Type and ID Cross-Reference

Table A-1 lists the type and ID number of messages along with the text of the message. If a user cannot remember the text of a message but does remember the type and ID, use this table to find the correct message. Once you know the text of the message, locate it in "3+ for Macintosh Messages" earlier in this appendix to determine its meaning and the action you can take to remedy the situation.

Table A-1. Type and ID Cross-Reference

Type	ID	Message
0	2	No such organization.
0	3	No such domain.
0	4	No such name in Name service.
0	5	Domain is remote.
0	6, 8	The object to which this alias refers does not exist in the Name service. Have administrator delete the alias.
0	7	Domain is foreign for alias's object.
0	9	The object to which this alias refers is itself an alias. Have administrator delete the alias.
0	13	Name already exists in Name service.
0	14	Name service has no more available space.
0	16, 25	Information about a Name service object is missing.
0	33	The user or group you tried to add is already listed in the group.
0	34	Not enough space for member in the group.
0	36	Name not found in Name service.
0	37	Incorrect password.

Table A-1. Type and ID Cross-Reference (continued)

Type	ID	Message
0	40	The domain you attempted to add already exists in the organization.
0	41	Maximum number of domains already in Name service. Configure 3+Name service to allow more domains.
0	45	Invalid organization.
0	46	Invalid domain.
0	47	Invalid name.
0	UNKNOWN	Name service error.
1	UNKNOWN	Internal DOS error.
2	1	Unable to link Shared Folder or printer due to a Share server problem. Try again later.
2	4	You cannot link to this Shared Folder. Check its access rights, and check to see if other users are linked to it.
2	5	The selected object has become unlinked. Try again. If error recurs, see your administrator.
3	UNKNOWN	Hardware error on Share server.
4	4	The user logged out while you were attempting a forced unlink.
4	7	The drive you specified does not exist on the server. Share server Get Info will display existing drives.
4	8	Maximum number of users already on Share server. Configure 3+Share service on Share server to allow more users.

Table A-1. Type and ID Cross-Reference (continued)

Type	ID	Message
4	10	User already exists on Share server.
4	11	Home Folder already exists.
4	15	User has Shared Folders, and therefore cannot be deleted. Log in as the user and unshare the Shared Folders.
4	16	User's Home Folder has files or folders in it, or user is linked to other Shared Folders. Have user empty Home Folder, then force unlink user from Share server.
4	20	The Shared Folder name or printer name already exists on the server. Assign a different name.
4	21	You have not typed a complete, correct path. Try again.
4	26	You cannot take this action because the print job or Shared Folder you selected is not yours.
4	27	Shared Folder or printer name not found on Share server. Close and reopen the 3+ Network Window.
4	28	You cannot unshare this Shared Folder or printer because another user is linked to it.
4	32	You cannot share a folder which is not on your own Share server.
4	34	The print job was deleted, or the printer finished printing it before your action took effect.
4	39	Print queue is empty.
4	40	The Share server has reached its maximum number of shared objects. Ask your administrator to configure 3+Share service to allow more sharenames.

Table A-1. Type and ID Cross-Reference (continued)

Type	ID	Message
4	41	You cannot unshare a printer when there are jobs in the print queue. Have an administrator move the queue to another printer or delete the queue.
5	5	Server is not responding. Wait 2 minutes and retry, or restart your Macintosh netstation.
5	-30010	Server is not responding. Wait 2 minutes and retry, or see your administrator.
5	-30012	Server refused to complete operation. Restart your Macintosh, and try again.
6	1	Your 3+ software needs minor repairs. Restart and try again.
6	2	You are linked to too many servers. Unlink objects from one or more servers.
6	6	An administrator has disabled new links to this printer.
6	8	You cannot delete a user who is linked to that user's Home Folder. Use the force unlink option in 3+NetAccess.
6	9	3+Share software has used up its memory; retry. If problem recurs, restart your Macintosh.
6	14	You are linked to too many objects.
10	5	Unable to link to object on server because the server does not have Macintosh file service. See your administrator.
10	6	There is not enough memory to add this folder to your desktop.

Table A-1. Type and ID Cross-Reference (continued)

Type	ID	Message
11	7	User is not known on the Mail server.
11	13	The user's mailbox on the Mail server is not empty.
11	14	Mail server has reached its maximum number of user mailboxes.
11	UNKNOWN	Mail server error.
21	20, 21, 22	A serious error has occurred during 3+ startup. Use the Chooser and resave your startup.

Appendix B: Customer Support Information

This appendix provides information on the following steps you can take:

- Attempt to isolate and solve a network problem.
- Confirm that a problem exists before you call your authorized reseller.
- Obtain support services from your reseller or 3Com Corporation.
- Obtain return authorization and repair of failed products.

Problem Sources

There are five common sources of network problems:

- A network user might misunderstand a network command or procedure and get an unexpected result.
- A new hardware component is installed or configured incorrectly, or is incompatible with another component.
- Application software can cause problems if it is not used correctly, if the software itself contains bugs, or if it is incompatible with network software or other application software.
- Cable problems can occur if the cable is connected or routed incorrectly, cable specifications are violated, the cable develops a mechanical or electrical fault, or the network is inadvertently disconnected.
- Overloaded servers can slow down network response times, or a netstation or server can develop a hardware problem.

Problem-Solving Tools

The following tools can help you to diagnose and solve network problems.

- A network diagram and log. Complete records and familiarity with your network configuration are invaluable tools in resolving problems.
- Ring loopback plugs. Loopback plugs let you isolate and test portions of the network to determine where the problem lies.
- Diagnostic software supplied with your 3Com server or board.
- The *3Com Third Party Product Support Guide* and your reseller can help you confirm that your network components and software are compatible.
- Network hardware and software guides—for example, the *3Server3 Guide,* the *3+ for Macintosh Administrator Guide,* and the *3+Share for Macintosh User Guide*—your netstation's operating manual, Macintosh manual, DOS manual, and your software manuals. These guides can help you interpret error messages.
- Digital ohmmeter. A digital ohmmeter or multimeter, available from your local electrical supply shop, will help you to identify cable defects, such as an open circuit or a short circuit, by measuring the cable's DC resistance. If you do not have a digital ohmmeter, an analog meter can also be helpful.

Before Contacting Your Reseller

Confirm that a problem exists by following these suggestions before you call your reseller.

1. If you are having trouble installing hardware or software on your network, see the guide supplied with the hardware or software, and repeat the installation procedures. Run any tests that are described to verify the current installation.

2. Check the *3Com Third Party Product Support Guide* to assure that the various components of your network are compatible and you have a supported configuration.

3. Check the cables and connectors to see that they have been attached correctly.

4. If the problem occurs on a single netstation, switch it with a known working unit and see if the problem persists.

If the problem continues, call your 3Com reseller for assistance.

Contacting Your Reseller

You should have the following information at hand before you notify your 3Com reseller or network manufacturer's representative:

- A complete description of the problem, including the following: the nature of the problem, duration of the problem, when the problem occurs, the components with which the problem occurs, and whether the problem still occurs if the application is used off the network.

- An accurate list of the network equipment model and serial numbers, and software product part numbers, including the software revision levels. Include the date you purchased the products.

- An accurate list of your equipment types and model numbers for netstations, monitors, fixed disks, printers, and so on; and a list of the third party software you are using, including Macintosh System and Finder level, DOS level, and software revision level.

- A list of any changes that have been made to your system configuration prior to your problem, including hardware changes, operating system software or application software changes, or system administration procedures.

How to Secure Support Service

Your authorized 3Com reseller is qualified to provide network planning, installation, hardware maintenance, applications training, and support services. Your reseller is uniquely qualified to provide on-site services for products from multiple vendors.

Authorized Service Centers

Local authorized service centers (ASC) are a good source of quality repair and spare parts. Often, they are able to respond more quickly than the factory and can provide on-site services. If your reseller is not a 3Com authorized service center, contact the 3Com Customer Relations Department at (415) 969-2099 to locate the ASC nearest you.

3Com Support Services

Should you wish to augment your reseller services with in-depth expertise on the 3Com components in your network, 3Com offers a variety of support services for purchase.

These services include the following:

- Technical bulletin subscription service.
- On-line bulletin board service.
- Software update services.
- Technical assistance via telephone (annual contract or per-incident charge).
- Annual contract covering all the above services.
- Consulting services to assist in programmatic interface to 3Com products.
- Return-to-factory repair services.
- Spare parts and parts kits for large installations and/or performing in-house repairs.

Information about these programs and services is available from your authorized 3Com reseller or directly from 3Com. Should your reseller be unable to assist you, please contact the 3Com Customer Relations Department at (415) 969-2099 for information.

Repair Service (RMA) Procedure

All returns for repair must receive an RMA (return materials authorization) number. To obtain this number and to inquire about service charges, call the 3Com Public Relations Department at (415) 969-2099. When you call, please have the following information ready:

- Company name
- Shipping address
- Product name
- Serial number
- Name, address, and telephone number of your technical contact
- Failure symptoms with diagnostic error messages

Warranty repairs must be accompanied by dated proof of purchase.

Payment is by COD. Before shipping completed repairs, 3Com will notify you of the delivery date and the exact amount due. Terms are available only if special authorization has been previously arranged.

Incoming items are tested carefully. Occasionally, when a hardware error cannot be duplicated, the unit will be returned with "No Problem Found." You will be charged for the testing and handling in this case. This charge also applies to warranty items.

Shipping Information

When you return an item for repair, ship the item as follows:

1. **Package it carefully.**

   Use the original container if possible, especially for larger units such as the 3Server. EtherLink® and EtherLink Plus boards should be wrapped in an antistatic bag. Do not pack them directly in popcorn-type shipping material. Do not return connectors, manuals, or cables.

2. **Clearly mark the RMA number on the outside of the shipping container.**

3. **Ship to:**

   3Com Corporation
   2091 North Shoreline Road
   Mountain View, CA 94043

Turnaround Time

Factory repairs normally take five working days and are returned by second-day air mail. Including weekends and combined shipping time, you can expect your equipment to be gone for a period of two weeks. A 24-hour turnaround option is available for an expedite charge.

Customer Satisfaction

3Com is committed to assuring your satisfaction with our products and assisting our resellers. If, for any reason, you are dissatisfied with the support programs available to you, please write to us at the following address:

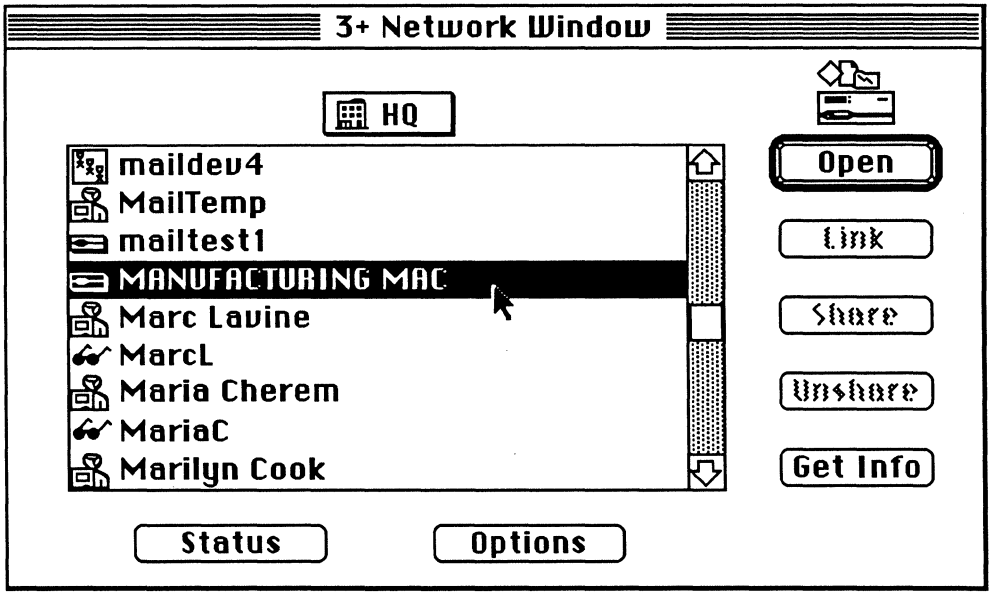
3Com Corporation
Customer Service
2091 North Shoreline Road
Mountain View, CA 94043
Attention: Customer Relations

Appendix C: Using the 3+ Network Window

The 3+ Network Window makes it easy to find network objects. This appendix gives a brief overview of how to use the 3+ Network Window. For more detailed information about the things you can do from the 3+ Network Window, see the *3+Share for Macintosh User Guide.*

The 3+ Network Window

The main part of the window is a list box showing objects available to you on the 3+ network. This list box changes, depending on what part of the network you are viewing. When you first log in, the 3+ Network Window displays your login name and the user icon as the title of the list box and shows your Home Folder in the list box. The following screen shows a domain as the title of the list box and lists the network objects within that domain.



NOTE: When logging in as Admin, a Home Folder does not appear in the list box unless you have assigned a Share server to Admin. 3+Share does not automatically assign a Share server to Admin.

The buttons on the side and at the bottom of the 3+ Network Window are used for taking actions or learning things about objects you select in the list box. Different buttons are enabled (bright, rather than dimmed) when you select different objects. Each button is explained briefly in Table C-1.

NOTE: A button that is dimmed (as the Link button is dimmed in the previous screen) indicates that you cannot take that action at the moment.

Table C-1. Buttons in the 3+ Network Window

Button	Action
Open	Opens the selected object. This object becomes the title of the list box, and objects within it are listed.
Link/Unlink	Links the selected object. Once linked, this button changes to Unlink and is used to unlink the selected object.
Share	Opens a dialog box allowing you to share the selected object, assigning access rights and a password.
Unshare	Unshares a selected object previously shared. The object then disappears from the list in which it was included.
Get Info	Opens a window with information about the selected object. If no object is selected, information about the object in the title of the list box is given.
Status	Opens a dialog box telling you which server your Home Folder is on and what Shared Folders and printer you have linked. Allows you to save these links and their passwords to be used as a startup configuration.
Options	Opens a dialog box listing the different types of network objects that can or cannot appear in the 3+ Network Window.
Done	Closes the 3+ Network Window and returns to the Chooser. When using the 3+NetAccess application, this button is not displayed. To exit the 3+NetAccess application, select Quit from the File menu.

Moving Through the Window

You can use the title of the list box to view lists of the different network objects available. Use the pop-down menu that appears when you press on the title of the list box.

With the 3+ Network Window, instead of choosing folders, you choose levels of the network hierarchy. When you press the title of the list box, the levels above it are shown in the menu. If you choose one of the higher levels, that level becomes the title of the list box and network objects under it are displayed. This hierarchy of information is similar to choosing a folder to see what is inside it.

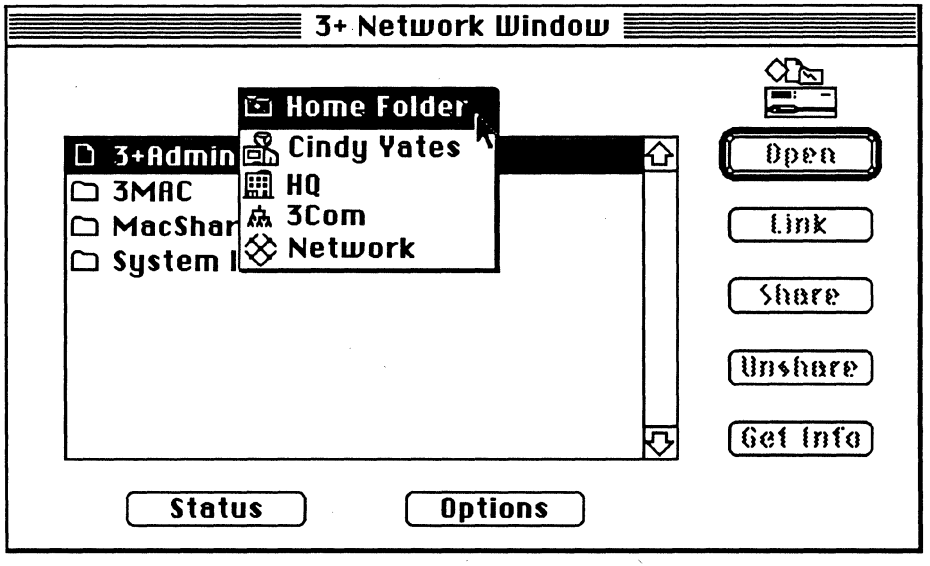


Figure C-1 shows the different levels of the 3+network hierarchy.

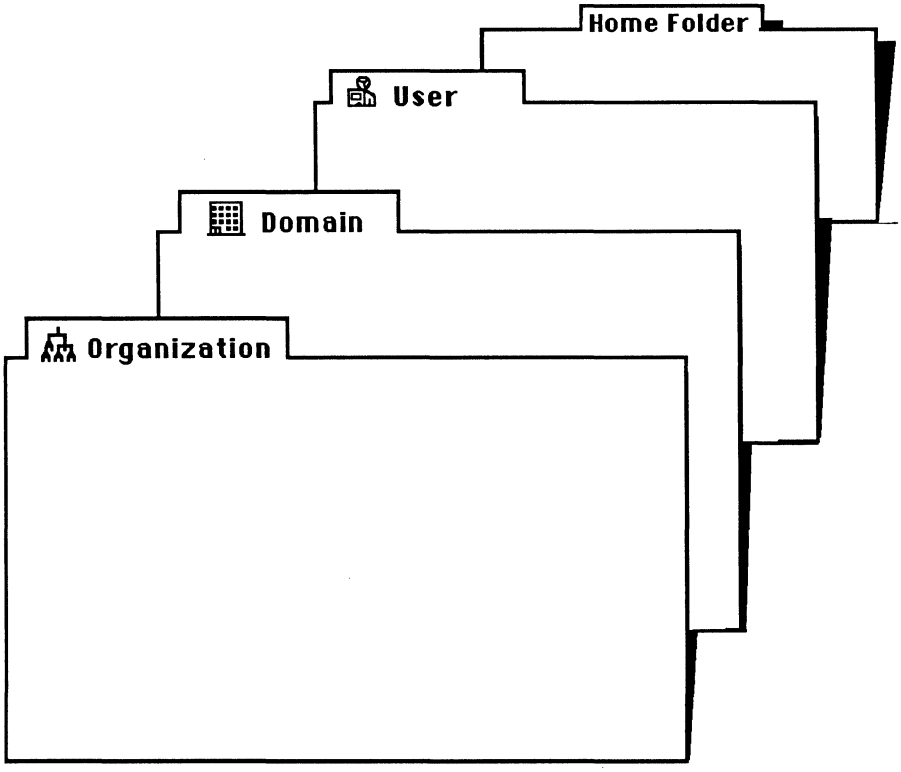


Figure C-1. Levels of the 3+ Network Hierarchy

Table C-2 shows what appears in the pull-down menu and the list box when you move to a different level of the network hierarchy.

Table C-2. Finding Objects in the Network Window

Title of the List Box	Pull-Down Menu Selections	Items Shown in the List Box
The Network	No selections	Organizations
Organization	The Network	Domains within the organization
Domain	Organization The Network	Users, servers, and other objects in the domain
User	Domain Organization The Network	Home Folder; any other folders shared by the user
Shared Folder	User Domain Organization The Network	Files and folders within the Shared Folder

Appendix D: 3+NetAccess Application Menus

This appendix provides a brief explanation of each selection in the 3+NetAccess application menus.

The File Menu

The File menu has six selections: Show Network Window, Close, Show Links, Unlink User, Logout, and Quit.

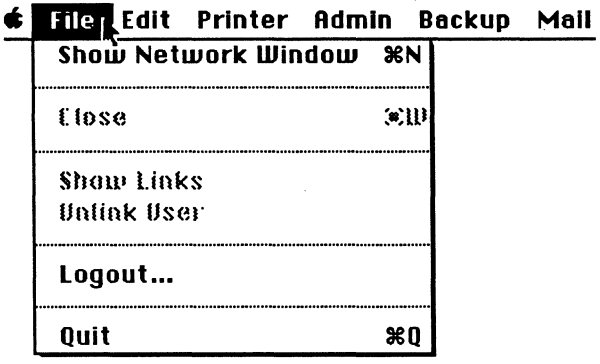
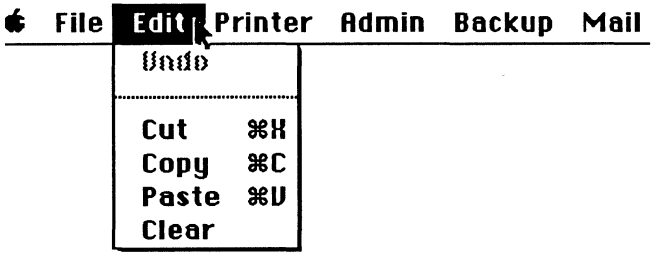


Table D-1. File Menu Selections

Selection	Use	Availability
Show Network Window	Makes the 3+ Network Window the active window.	Available to all users.
Close	Closes the active window. This selection is not available when the active window is the 3+ Network Window.	Available to all users.
Show Links	Displays all users who are linked to the object selected in the 3+ Network Window. Can be used to show links to shared printers, shared folders, or servers.	Available to all users.
Unlink User	Unlinks the selected user from Shared Folder and printer links on the specified server. Enabled only when selecting a user in the Show Links window.	Must have Admin capability.
Logout	Logs out the current user and opens the standard login dialog box. Using this option allows the user to log out and log in again without quitting the 3+NetAccess application.	Available to all users.
Quit	Quits the 3+NetAccess application and returns to the desktop.	Available to all users.

The Edit Menu

The Edit menu contains the standard Macintosh edit commands: Undo, Cut, Copy, Paste, and Clear. The 3+NetAccess application supports all these commands *except* Undo.



The Printer Menu

The Printer menu has four selections: Set Option, Show Status on <*printername*>, Move Queue, and Change Configuration.

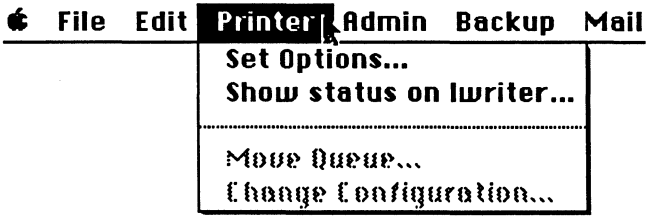


Table D-2. Printer Menu Selections

Selection	Use	Availability
Set Options	Allows setting of the form number, the defer option, or the hold option for all print jobs subsequently sent to the linked printer. Only available when a printer is linked.	Available to all users.
Show Status on <*printername*>	Displays the queue and status of the printer selected in the 3+ Network Window. Allows Admin to remove, defer, set the priority, or set the form number for any job in the queue. Allows users to set these options for their own print jobs.	Available to all users.
Move Queue	Moves entire print queue from one printer to another printer attached to the same server. If a job is in the process of printing, it is not moved.	Must have Admin capability.
Change Configuration	Allows Admin to stop printing on the printer selected in the 3+ Network Window. Also allows unlinking of all users linked to the printer, setting of the printer's form number, disabling or enabling new links to the printer, and disabling or enabling printing of a banner page before each print job.	Must have Admin capability.

The Admin Menu

The Admin menu has 10 selections: Add User, Add Server, Add Domain, Add Group, Add Members, Add Alias, Delete Item, Server Date & Time, Shutdown Server, and Confirm Changes.

NOTE: This menu is available only to users with Admin capabilities. Users accessing the 3+NetAccess application who do not have Admin capabilities will not see this menu.

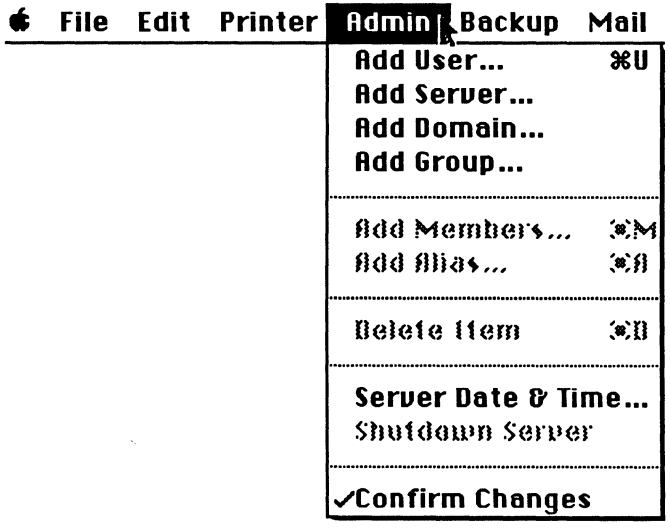


Table D-3. Admin Menu Selections

Selection	Use	Availability
Add User	Allows addition of new users to the Name service.	Must have Admin capability.
Add Server	Allows addition of servers to the Name service. Used to add servers on a remote network to the local Name service.	Must have Admin capability.
Add Domain	Allows addition of new domains to the Name service.	Must have Admin capability.
Add Group	Allows addition of groups to the Name service. Groups are used as distribution lists for 3+Mail.	Must have Admin capability.
Add Members	Allows addition of members to established groups.	Must have Admin capability.
Add Alias	Allows addition of an alias (or nickname) for users, groups, domains, and so on.	Must have Admin capability.
Delete Item	Deletes the object currently selected in the 3+ Network Window.	Must have Admin capability.
Server Date & Time	Sets the date and time for the Name server only.	Must have Admin capability.
Shutdown Server	Shuts down all services installed on the server selected in the 3+ Network Window. All links between the selected server and all users are broken.	Must have Admin capability.
Confirm Changes	When checked, a confirmation dialog box will be displayed whenever a change is made to any window or when Delete Item is chosen.	Must have Admin capability.

The Backup Menu

The Backup menu has 10 selections. The menu is available only to users with Admin or server-user capabilities. Other users of the 3+NetAccess application will not see this menu.

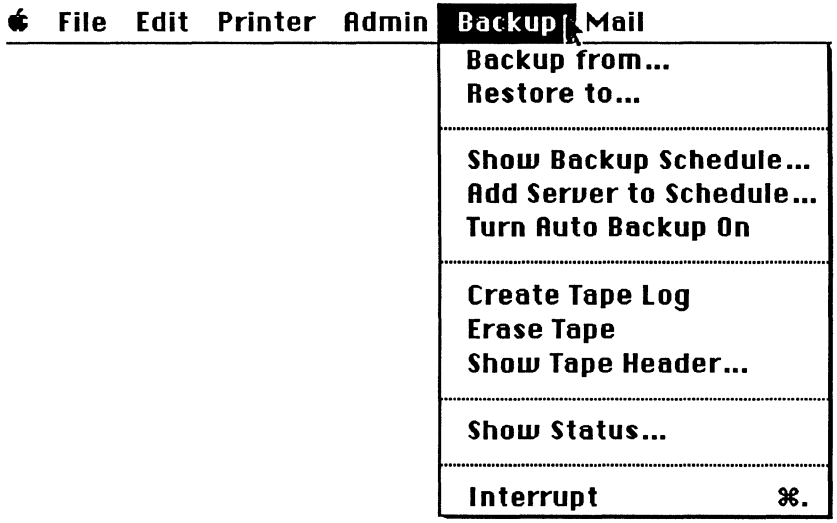


Table D-4. Backup Menu Selections

Selection	Use	Availability
Backup from	Initiates manual backup of the server selected in the 3+ Network Window according to the options specified.	Must have Admin or server-user capability.
Restore to	Initiates restoring data to the server selected in the 3+ Network Window according to the options specified.	Must have Admin or server-user capability.
Show Backup Schedule	Displays the schedule for automatic backups.	Must have Admin or server-user capability.
Add Server to Schedule	Adds data to the automatic backup schedule for the server selected in the 3+ Network Window.	Must have Admin or server-user capability.
Turn Auto Backup Off/On	Activates or deactivates the automatic backup schedule.	Must have Admin or server-user capability.
Create Tape Log	Generates a list of all files and folders contained on the tape. Requires use of a word processor or text editor to read the tape log.	Must have Admin or server-user capability.
Erase Tape	Erases the contents of the streaming tape cartridge and prepares the tape for reuse.	Must have Admin or server-user capability.
Show Tape Header	Gives information about the first backup on the tape: server name, backup date, type of backup, and so on.	Must have Admin or server-user capability.
Show Status	Identifies current operation (if any), start time, operator, and so on.	Must have Admin or server-user capability.
Interrupt	Stops the current operation: Backup to, Restore from, or Create Tape Log. Erase cannot be interrupted.	Must have Admin or server-user capability.

The Mail Menu

The Mail menu has three selections. The menu is available only to users with Admin capabilities. Other users of the 3+NetAccess application will not see this menu.

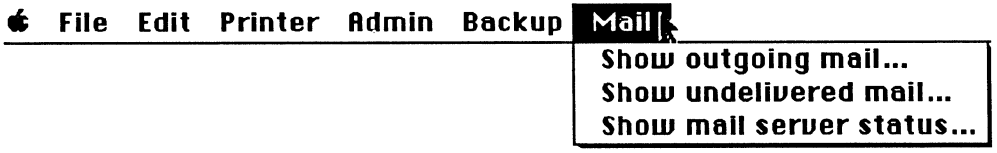


Table D-5. Mail Menu Selections

Selection	Use	Availability
Show outgoing mail	Displays the number of Mail messages waiting to be sent from the selected server to other servers. Allows deletion of all messages or only the oldest message waiting to be sent.	Must have Admin capability.
Show undelivered mail	Displays the number of messages waiting to be retrieved by each user on the selected Mail server. Allows deletion of all messages or only the first message waiting to be retrieved by a user.	Must have Admin capability.
Show mail server status	Displays the current default values for the selected Mail server and the number of people currently using 3+Mail.	Must have Admin capability.

Appendix E: Simultaneous PC and Macintosh Use

Some users may need to use a Macintosh netstation at times and an IBM PC or compatible netstation at other times. With a little advance preparation, such a user can easily access all network files and resources from either an IBM PC or a Macintosh netstation. If desired, the user can use both types of netstations at the same time.

There are two methods for arranging PC and Macintosh netstation access:

- Create a Shared Folder within the user's Home Folder for storing all IBM PC netstation files.
- Assign a second Shared Folder name to the Home Folder and link to this new Shared Folder name when using a PC netstation.

Instructions for arranging access using each of these methods are given below.

Creating a Shared Folder for PC Files

Use this method if you want to keep PC and Macintosh files separate. Advantages of this method are:

- Your PC and Macintosh files are kept separate in your Home Folder. If there is a network problem, having the PC and Macintosh files separate may help in isolating the problem.
- Your PC is fully functional for use with all applications, even though it is not linking directly to your Home Directory. All PC files and folders are in the Shared Folder PCSTUFF.
- Your Macintosh is switch launched to your Home Folder, allowing you to add as many fonts and desk accessories as the server's disk space will allow.
- Your Macintosh disk drive is free for use with any diskettes you need; you no longer need to keep the startup diskette inserted.

NOTE: Both a PC and a Macintosh netstation are used in this procedure. Unless otherwise specified in a step, you can use either machine.

1. **Log in to the network as the user and link to the Home Folder.**

   Make sure the user is logged in on only one netstation.

   NOTE: If you are using a PC netstation, the Home Folder is equivalent to the Home Directory (or HomeDir). Using the command 3F LINK without specifying a sharename automatically links the Home Directory to the drive you specify.

2. **Create a new folder in the Home Folder called PCSTUFF.**

3. **Move all the user's PC folders and files to the new PCSTUFF folder.**

4. **Share the new PCSTUFF folder, assigning it the sharename PCSTUFF and Private access rights.**

5. **On a PC netstation, modify the batch file used for logging in to link to the new PCSTUFF folder instead of the Home Folder.**

   Use MED, EDLIN, or another text editor to modify the file. Change the line:

   ```
   3F LINK e:
   ```

   to

   ```
   3F LINK pcstuff e:
   ```

6. **If the user wants to switch launch, complete the following three steps.**

   a. **On a Macintosh netstation, copy the System Folder from a 3+ for Macintosh Startup diskette to the Home Folder and add any desired fonts or desk accessories.**

      Use the Font/DA Mover to add the desired fonts and/or desk accessories to the System Folder on the user's Home Folder.

   b. **On the Macintosh netstation, use NetSwitch or NetSwitchMF to switch launch to your Home Folder.**

c. **Set the Macintosh netstation startup to automatically open the NetSwitch or NetSwitchMF application.**

   Follow the instructions in the *3+Share for Macintosh User Guide* to set the Macintosh netstation's startup.

The user can now log in and use the network on both the PC and Macintosh netstations.

Assigning a Second Name to the Home Folder

Use this method if you want to have all PC and Macintosh files in the Home Folder. Advantages of this method are:

- There is no need to move existing PC files.
- If the user accesses PC and Macintosh files with a PC- and Macintosh-compatible application, all the files (both PC and Macintosh) can be kept together. For example, the user may receive Microsoft Word documents in PC format and access them using the Macintosh version of Microsoft® Word.
- Your Macintosh is switch launched to your Home Folder, allowing you to add as many fonts and desk accessories as the server's disk space will allow.
- Your Macintosh disk drive is free for use with any diskettes you need; you no longer need to keep the startup diskette inserted.

NOTE: Both a PC and a Macintosh netstation are used in this procedure. Unless otherwise specified in a step, you can use either machine.

1. **Log in to the network as the user and link to the Home Folder.**

   Make sure the user is logged in on only one netstation.

   NOTE: If you are using a PC netstation, the Home Folder is equivalent to the Home Directory (or HomeDir). Using the command 3F LINK without specifying a sharename automatically links the Home Directory to the drive you specify.

2. **Assign a new Shared Folder name of PCHOME to the Home Folder, providing Private access rights.**

   If you are using a PC netstation, use the 3F SHARE command. See the *3+Administrator's Guide Volume II* or *3+Share User Guide* for information.

   If you are using a Macintosh netstation, select the Home Folder in the 3+ Network Window and click Share. Type:

   ```
   PCHOME
   ```

   in the Shared Folder Name text box, click the Private radio button, and click Share.

3. **On a PC netstation, modify the batch file used for logging in to link to the new PCHOME Shared Folder name instead of the Home Folder.**

   Use MED, EDLIN, or another text editor to modify the file. For example, change the line:

   ```
   3F LINK e:
   ```

   to

   ```
   3F LINK pchome e:
   ```

4. **If the user wants to switch launch, complete the following three steps.**

   a. **On a Macintosh netstation, copy the System Folder from a 3+ for Macintosh Startup diskette to the Home Folder and add any desired fonts or desk accessories.**

      Use the Font/DA Mover to add the desired fonts and/or desk accessories to the System Folder on the user's Home Folder.

   b. **On the Macintosh netstation, use NetSwitch or NetSwitchMF to switch launch to your Home Folder.**

   c. **Set the Macintosh netstation startup to automatically open the NetSwitch or NetSwitchMF application.**

      Follow the instructions in the *3+Share for Macintosh User Guide* to set the Macintosh netstation's startup.

The user can now log in and use the network on both the PC and Macintosh netstations.

Glossary

3+ Network Window

Your main entry point for finding and connecting to items on the 3+ network. Users access this window from the Chooser desk accessory. Administrators have access through the administration application.

3+Share for Macintosh

3Com's software product that allows Macintosh netstations to access the 3+ network through use of the File and Print services.

Access rights

Attributes you assign to a Shared Folder name to control how users access and use the folder with that Shared Folder name.

Account

The record of a user on a server. To use the shared resources of a server, a user must first have an account on a server. Administrators create accounts on servers. Accounts are assigned user names and passwords. See also Administrator, Password, and Username.

Active window — The frontmost window on the desktop; the window where the next action will take place. In most applications and desk accessories, the active window's title bar is highlighted.

Admin — *See* Network administrator.

Alert box — *See* Dialog box.

Alias — A second name for a network object. Aliases are typically short nicknames for user names.

Apple menu — The Apple® menu on the far-left side of the menu bar.

Application program — Software used for a specific purpose, such as word processing, spreadsheet creation, or graphic design. Also known as an application.

Button — The place in a dialog box or window where you click to confirm or cancel an action. *Compare* Check box, Radio button.

Cancel button — A button you click to cancel the command or action represented in the active window or dialog box.

Check box — The small box (square or circular in shape) associated with an option in a dialog box that, when clicked, selects or deselects the option. *Compare* Radio button.

Chooser — A desk accessory in the Apple menu. You can use it to choose a printer or to access any part of the 3+ network shown in the 3+ Network Window.

Close box

The small square on the far-left side of the title bar of an active window. Clicking a close box closes the window.

Command

A word or phrase, usually in a menu, describing an action to be performed. Also, a combination of the Command key and a character key that accomplishes an action.

Command key

The key with the ⌘ symbol on it that, when held down while another key is pressed or a mouse action is performed, causes a command to take effect. Sometimes referred to as the Apple key.

Connector

A piece of equipment used for attaching a device to a network cable. A LocalTalk connector is a unit with a plug, short cable, and small box that connects a Macintosh netstation to a LocalTalk cable.

Conversion

The change of a file from one format to another; typically, from PC format to Macintosh format. Also known as translation.

Copy-protected

Applications that cannot be copied. Only users with specific permission can copy and use them. A network license and/or use of a Master or Key diskette containing the application or file is required to run copy-protected applications on your Macintosh.

Corruption (of files)

Damage to files caused by hardware errors, software errors, or user errors such as misuse of applications, or improper access.

Current startup diskette The startup diskette whose System file the Macintosh netstation is currently using.

Its icon appears in the upper-right corner of the desktop. It is not necessarily the diskette you started up your Macintosh netstation with. This is because the Finder can switch control of your Macintosh netstation to a System file other than the one on your original startup diskette.

Default A previously set option or setting, such as those in effect in the Macintosh Control Panel the first time you use it.

Deferred Put off, delayed. Describes a print job that the user has kept from being printed.

A deferred print job waits its way to the top of the print queue, then remains there, letting other jobs go to the printer until the user clicks Release in the printer status dialog box. When released, the job goes to the printer as soon as it finishes its current job.

Desk accessory A miniapplication available from the Apple menu regardless of which application you are using. The Alarm Clock, Calculator, and Chooser are examples of desk accessories.

Desktop What you see on your Macintosh screen when you are not looking at a dialog box or window. The Finder's desktop shows icons and/or information for the applications, files, and folders available to you.

Dialog box

A box on your Macintosh screen containing a message that requests information from you or gives you a warning (accompanied by one or more beeps or a flash if the volume on your speaker is turned down).

Directory

The MS-DOS® equivalent of a folder. There are files, subdirectories, directories, and a root directory on any disk organized into the MS-DOS file/directory hierarchy.

Document

A file you create using an application. It can contain information of any type: numeric data, text, or graphics.

Domain

A part of an organization; usually named for a geographic location or a department.

The domain is the middle part of the three-part name (name:domain:organization) that uniquely identifies any object on the 3+ network.

Enabled

Made able; provided with the means, power, or opportunity. Describes a button, menu item, or other option that is available for use. A button or option that is *not* available for use is dimmed (disabled) or not displayed.

Error message

A dialog box that appears when a problem has occurred, either with your Macintosh, the software in it, or the network.

Error state

The state of a printer, server, or other network hardware object, when it cannot work due to a network problem or network error.

File service Service that manages a common file structure for both Macintosh shared folders and PC directories on the 3+ network.

Finder An application contained in the System Folder that controls the desktop. You use it to manage documents, folders, and applications, and to get information to and from diskettes or shared folders.

Form A designated type of paper for printing. Examples of forms are 8-1/2-by-11-inch letter-sized paper, 8-1/2-by-14-inch legal-sized paper, and preprinted forms. The network administrator assigns a number to each form.

Get Info A button in the 3+ Network Window used to get information about a selected object or user.

Group A collection of named network users or objects. Typically, a group is a collection of users in a distribution list for 3+Mail.

Hierarchical file system A file system that organizes Macintosh files into folders and diskettes or shared folders. Folders can be nested inside folders to create a multilevel hierarchy.

Hierarchy A group of items organized according to levels, or one item containing another. In the 3+ network, names follow a three-part hierarchical scheme, where the parts are used to locate users within a network and across networks.

Hold (on hold)

Describes a print job that the user is keeping at the end of the print queue. This is done so other documents can be added to the end of the queue and printed at the same time.

Home Folder

A special folder on the 3+ network reserved for your personal use. Once you have linked to it, its icon appears on the desktop, and you can use it as you would a diskette.

Icon

A graphic representation of an object, a concept, or a message. Icons are often seen on the Finder's desktop or in the 3+ Network Window.

Key combination

Several keys, pressed one after the other; used to give a special command, such as Copy (Command-C in MacWrite) or Print (Command-P in Microsoft Excel).

Link

A logical connection between your Macintosh and a network object; also, to make such a connection.

Log out (log off)

To unlink any items you are linked to and leave the 3+ network. You must save your latest work and quit the application before taking this action.

Mailbox (mail folder)

Area reserved in your Home Folder to store 3+Mail messages you have retrieved.

Member

One of a collection of users or objects in a group; typically a user in a group used as a distribution list for 3+Mail.

Mixed network

A 3+ network with both Macintosh and PC netstations attached to servers.

Multiuser application An application that allows several users to access a file in a Shared Folder at the same time without corruption of the file.

Name service A database that stores the names of and information about users, named network items, and named parts of the network. Used by the Mail, File, and Print services. There is only one Name service per local 3+ network.

Netstation An intelligent, standalone computer or network station, such as 3Station, used on a network.

Network A group of connected electronic devices communicating through the use of appropriate software. Network users can share information, ideas, services, and valuable resources, such as printers.

Network address A 12-digit hexadecimal number that uniquely identifies a netstation or server on a network.

Network administrator A network user who has been assigned the administrator (Admin) capability class. This is often the person who sets up and manages your 3+ network.

Network object Something you can make a logical connection (link) to and use on the 3+ network.

Object *See* Network object.

Organization The top level of the Name service hierarchy; often named for the company where the network resides. The organization is the third part of the three-part name (name:domain:organization) that uniquely identifies a network object.

Password A word that can be assigned to a user name, a Shared Folder, or a printer, to control access. Passwords for user names can have up to 12 characters. Shared Folder and printer passwords can have up to 8 characters. All letters and numbers are legal characters for passwords.

Pop-up menu A menu, containing several choices, that opens when you press on the title; for example, the domain menu in the login dialog box.

PostScript A page description language used by LaserWriter printers and certain other printers to print out computer-generated text and graphics.

PostScript printer A LaserWriter or other compatible printer that uses the PostScript page description language.

Preselected *See* Default.

Print job A document that is either being printed or waiting in a queue to be printed.

Printer status dialog box A dialog box that gives you information about the PostScript printer you are linked to and information about the queue of jobs waiting to be printed.

Priority

A value that determines the rate at which a print job moves up the print queue.

The value can be set at any number from 1 to 99. The default setting is 50. You can raise your own job's priority for a rush job, or you can lower it if the job can wait.

Private

Access right for Shared Folders you want to keep to yourself. Only one person can use a Private Shared Folder at a time. You can share a Private Shared Folder with another user *only* by assigning a password to it and giving the password to the other user.

Queue

Waiting line of jobs on a printer's server. Jobs are *spooled* on the server and sent to print one at a time when they reach the top of the queue.

Radio button

The small, circular button associated with an option in a dialog box that, when clicked, selects an option. Clicking again doesn't deselect a radio button; you must click some other radio button.

Read Only

Access right for Shared Folders you want users to be able to read and copy things from, but not change or add things to. Access can be restricted by assigning a password to the Shared Folder. Read only is the same as Public access right on 3+Share for PC netstations.

Read/Write

Access right that allows all users to read from and write to (modify) a Shared Folder. Multiuser applications might require this access right. Do *not* share other applications on a Shared Folder with this access right unless you are sure that only one user at a time will use the applications.

Read/Write/Create Access right that gives free access to a Shared Folder. Multiuser applications might require this access right. Do *not* share other applications on a Shared Folder with this access right unless you are sure that only one user at a time will use the applications.

Restart A command in the Special menu that unlinks Shared Folders, printers, and any other network objects you have linked to, logs you out, ejects any diskettes in your internal or external drives, and starts up your Macintosh again.

Running Status of a device, such as a printer or server, that is either ready to work or working; also used to describe an application that is in use.

Server An intelligent storage device and clearinghouse for network information, services, and applications.

Server-user A network user who logs in using the name of a server as a user name; performs special administrative functions such as naming and sharing printers.

Service A software program that provides a capability or function to network users. Some services, such as 3+Mail, are encountered directly by the user. Others, such as the 3+Name service, work behind the scenes to keep the network running smoothly.

Sharable

Access right that allows all users to create Shared Folders within the original Shared Folder, as well as read it, write to it, and create folders in it. Multiuser applications might require this access right. Do *not* share other applications on a Shared Folder with this access right unless you are sure that only one user at a time will run the applications.

Shared Folder

A folder a user has made available to other users on the 3+ network. Once you have linked to a Shared Folder, its icon appears with the diskette icons on your Finder's desktop.

Shared Folder name

A name you give to a folder when you share it over the 3+ network. You also select a folder's Shared Folder name in order to link to that folder.

Shut Down

Command in the Special menu of the Finder that unlinks any links you have on the 3+ network, logs you out, and ejects any diskettes in your internal or external disk drives. It also causes a dialog box to appear on a black screen, telling you it is safe to turn off your Macintosh.

Spooling

Sending print jobs to a 3Com server and storing them while they wait to be printed. This frees your netstation for your use.

Startup diskette

Diskette containing the System file your Macintosh netstation needs to start itself. It also contains 3+Share for Macintosh files, which allow you to connect to and begin work on the 3+ network. A personal hard disk can be used as a startup diskette.

Strip Remove special or illegal characters from a document in order to transfer it from a PC to a Macintosh netstation.

System file A file your Macintosh uses to start itself and to provide system information. It must be kept with the Finder, in the System Folder.

Three-part name The name that uniquely identifies objects and users on the 3+ network. It consists of the name of the object, its domain, and its organization (for example, Pat User:HQ:3Com).

Unlink To undo the logical connection that you made by linking to a network object.

User A person who uses the 3+ network. Most users are assigned the capability class User. Some have the special capability class Admin in order to act as network administrators.

User name The name of a user as registered in the 3+ network Name service.

User Status dialog box A dialog box that users can open in the 3+ Network Window. It gives you information about network objects, including the location of your Home Folder (your share server), your linked Shared Folders, and the PostScript printer to which you have linked. This dialog box also allows you to save the links to these items for startup and to save all passwords.

Write Only

Access right that allows all users to change or add to a Shared Folder you have made available, but not to read it.

Zone

A group of two or more AppleTalk networks within a single large network made up of many interconnected AppleTalk networks.

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